BEHAVIORAL AND SOCIAL RESEARCH PROGRAM

1998 - 1999 ANNUAL REPORT

National Institute on Aging
National Institutes of Health

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Behavioral and Social Research

Office of Demography of Aging

SECTION I: OVERVIEW

A. Mission and Program Description

The Behavioral and Social Research (BSR) program of the National Institute on Aging (NIA) supports basic social and behavioral research and research training on the aging process and the place of older people in society. It focuses on how people change with aging, on the interrelationships between older people and social institutions (e.g., the family, health-care systems), and on the societal impact of the changing age-composition of the population. Emphasis is placed upon the dynamic interplay between the aging of individuals and their changing social and physical environments.

BSR's basic goal in supporting research and training and in developing research resources (data sets) and methodologies is to produce a scientific knowledge base for maximizing people's health and functioning in their middle and later years and to increase active life expectancy. This knowledge base is required for informed and effective public policy, professional practice, and everyday life.

The program is guided by three basic facts:

1. The processes of aging are neither fixed nor immutable. They are the products of a complex interplay among social, behavioral, and biological factors.
2. The aging process is influenced by and influences changing cultural, socio-economic, and population structures, which vary over historical time.
3. Aging processes occur over the entire life course.

These facts imply that aging processes are subject to intentional modification and that the developing knowledge base can be used to guide interventions and to evaluate their intended and unintended consequences.

B. Organization

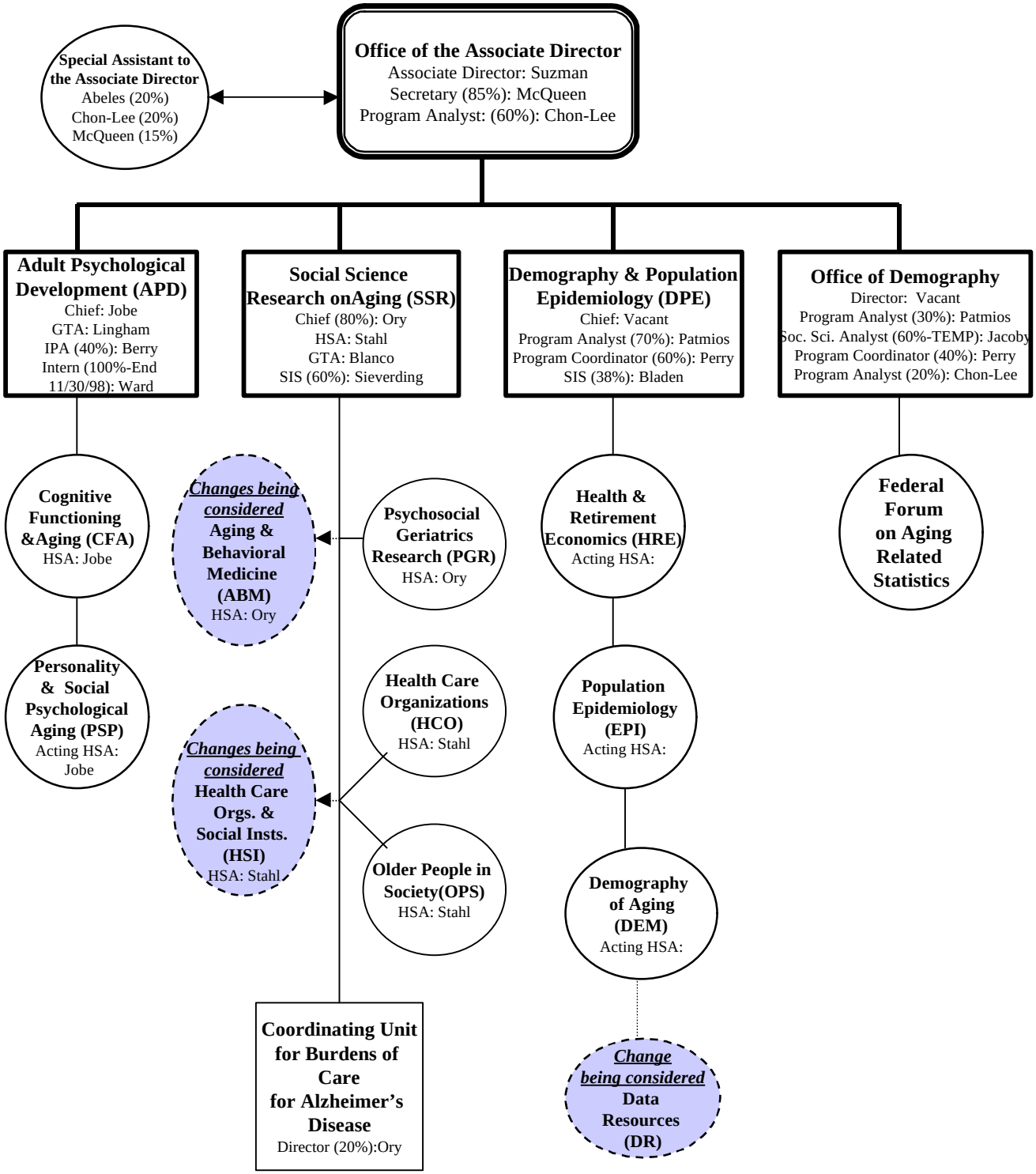
Structure

As depicted in the Organization Chart, BSR is administratively organized into three branches: Adult Psychological Development; Social Science Research on Aging; Demography and Population Epidemiology; and the Office of Demography of Aging. Brief descriptions of BSR's components, including staffing as of October 1, 1997, and overviews of recent activities, research findings, and summaries of proposed program development are set forth on the following pages.

OFFICE OF THE ASSOCIATE DIRECTOR

The Office of the Associate Director provides overall scientific and administrative guidance and coordination for BSR's research and research training activities. Ronald Abeles was the Associate Director until September 1st, 1998 but now he is the Special Assistant to the Associate Director (20%) and with the Director of OBSSR (80%); Richard Suzman was the Acting Associate Director from September 1st to September 13th but as of September 14th, 1998 is the Associate Director. **Staff:** Lesa McQueen, Secretary, 85% to Dr. Suzman and 15% to Dr. Abeles; Angie J. Chon-Lee, Program Analyst, 60% to Dr. Suzman, 20% to Dr. Abeles and 20% to Office of Demography.

Organization Chart- Behavioral & Social Research



NACA Review of Program in February 1998. A major review of the BSR Program was conducted by a sub-committee of the National Advisory Council on Aging. The written review Report, received in September, makes a number of recommendations. These recommendations will be carefully considered and where advisable implemented over the next year. However, the spirit of some of the recommendations will be implemented immediately.

The Report recommends that BSR evaluate the product and output of its funding of research using a series of yardsticks. Potential yardsticks include articles published in leading general science or medicine and also disciplinary journals, citation impact, honors received by BSR funded investigators, press coverage of research findings (indicating significance), testimony based on research findings to Congress or the higher levels of the Executive Branch and impact on policy, practice and legislation. BSR will continue to monitor the impact of its funding in all areas, including training, through the use of these and other indicators of excellence. BSR will continue to develop appropriate measures for assessing excellence, including refinement of citation impact and analysis of training experiences.

The Report also recommends increased research that cuts across the BSR Branch Structure. A start has been made on adding cross-cutting research in a number of areas, some of which are discussed in this Sourcebook. For example, work has begun on a cross-BSR activity in the area of caretaking. A component is being added to a workshop on Personality and Aging that will examine the use of personality measures in economic models of retirement, saving, economic risk taking, etc. all with the view of adding personality measures to ongoing studies such as the HRS. Work and aging will also be advanced as a cross BSR initiative perhaps with a focus on what can be done to permit those older workers who want to keep working to remain in the labor force. Consideration will be given to developing a more unified focus on genetic issues, including behavioral genetics, population genetics, genetic aspects of biodemography, ethical issues in the field, and the social impact of genetic research. We will also examine the promise of new methodologies such as non-linear dynamics that may be relevant to several areas of the social and behavioral sciences. We have already started to look in to the issue of what infrastructure is needed for the next decade in order to ensure continued and rapid progress in the social and behavioral sciences. Where useful BSR will make common cause with other NIH institutes, OBSSR, and NSF.

The Report urges strengthening of the APD staff, and we will proceed to try to accomplish this although first we will need to carefully evaluate the potential scientific opportunities in various areas of psychology, for example, social and personality, behavior genetics, behavior medicine etc.

The Report considered that the Social Science Research (SSR) Branch lacked adequate focus. A start has been made on considering a number of options for restructuring, renaming and reorganizing this branch and its sections. One set of suggestions made by SSR is included as one of a number of possible re-organizations. Various strategies will be considered over the course of the next six months to a year before final decisions are recommended, and advice will be sought from a number of consultants.

The **OFFICE OF DEMOGRAPHY OF AGING** [(Vacant, Director, 25%; Georgeanne Patmios, Program Analyst, 40%; Kristen Robinson, Social Science Analyst, 100% (June 98 to September 98); Mary Jacoby, Social Science Analyst, 60% (Part time, temporary position started as of January 98; maternity leave from mid-July to October 19); Angie J. Chon-Lee, Program

Analyst, 20%; Donna Perry, Program Coordinator, 40% (until October 23)] was established late in FY 1991 in order to coordinate and implement a variety of demographic and related initiatives.

NIA founded the Office in response to five needs: 1) For a coordinated, consistent, dynamic, accurate source of aging-related demographic statistics and projections. 2) For broad resources to stimulate and guide the development of aging-related demographic data and methods within NIA and other agencies. 3) To be responsive to Congressional concerns: "The [House Committee on Appropriations, FY 1991] recognizes that many health problems facing our nation have important demographic, social and behavioral dimensions that merit systematic study and reiterates its support for the demographic research programs of the NICHD and NIA as core elements of the NIH's institutional mandate." 4) For information and research on the **costs of illness**, which was and is currently handled on an *ad hoc* basis by OPAE. This need extends beyond the boundaries of demography of aging--including also aspects of epidemiology, health services, and economics. 5) For NIA to reinforce its visibility as a national and international leader in the demography of aging.

The functions of the Office are:

- *To provide NIA staff support and overall guidance* to the Federal Forum on Aging-Related Statistics and to the corresponding units at the Bureau of the Census and the National Center for Health Statistics;
- *To facilitate communication and coordination* in the development and use of data bases, identification of research opportunities, and in long-range research planning;
- *To provide information* for answering internal and external requests for demographic facts, developing cost-of-illness analyses, and for disseminating demographic reports; and
- *To produce information, including publications,* via the synthesis, evaluation, and analysis of demographic information and the evaluation of selected public policies.

The Office had a strong start with minimal resources as evidenced in the historical report prepared in December 1994 (available from ODA). Although progress was hampered due to periodic staffing cut-backs that began in FY 1992, we have been able to adapt through the use of outsourcing to, for example, the Population Reference Bureau (PRB) and now to the Maine Center for Policy Research, and also, in effect, to the Exploratory Demography Center network.. Thus, PRB produced a series of one-page (2-sided) briefs entitled, *Aging Trends and Forecasts* that presents information for policy users on topics such as, the findings from the *Proceedings of National Academy of Sciences* (PNAS) article on disability declines, the Health and Retirement Study, accessing the Demography Center and database home pages, and forecasting the aging of the baby boom cohort. In FY 98, ODA increased the number of issues and funded them through the Census IDBA interagency agreement. The series, now entitled *Research Highlights in the Demography and Economics of Aging*, is being written and managed by Dr. Richard Woodbury, formerly with the NBER, at the Maine Center for Policy Research. He is working closely with the Demography Centers and with funded interagency agreements, and has so far produced 2 new issues on health insurance and retirement, and on Social Security and retirement around the world.

ODA has contributed to the development of the discipline through National Academy of Sciences (NAS) workshops and sponsored publications. These include *Demography of Aging; Assessing Knowledge of Retirement, Assessing Policies for Retirement Income: Needs for Data, Research, and Models; Improving Data on America's Aging Population; Racial and Ethnic*

Differences in the Health of Older Americans; *and Between Zeus and the Salmon: the Biodemography of Longevity*. NIA also cosponsored panels on confidentiality (*Private Lives and Public Policies*) and on the *Demography of American Indians*. Many of these workshops and publications have had and will have significant impacts on the field. The NAS will be putting all of the NIA-funded reports on a CD-ROM to facilitate dissemination. The Report *Improving Data* is circulating among G-8 and many OECD countries. The workshop on modeling retirement income could have a major impact on analyses of the HRS and AHEAD, is linked with several past and current DPE initiatives, may lead to other federal agencies developing government models of the retirement process. In FY 98, ODA funded 3 new NAS workshops: *Collecting Biological Indicators and Genetic Information in Household Surveys*, an *International Panel* to develop a research agenda for population aging, and a workshop on *confidentiality and data access* for research (see IAG progress reports section).

Under an Interagency Agreement, the Census Bureau published a Comparative International Chartbook on *Older Workers, Retirement, and Pensions* and a new edition of Sixty-*five Plus in America*, and global and national *wallcharts*. The publication *An Aging World* is currently under revision and we hope that it will be published this year to coincide with the International Year of the Older Person. Last year ODA proposed and gained approval for several new interagency agreements. These include a contract to the Population Reference Bureau to produce a teaching module on population aging geared to high school students, and the Wave 3 of the Longitudinal Study of Aging II (LSOA 2 Wave 3) (see IAG progress reports section).

In the past, meetings of the Federal Forum on Aging-Related Statistics have helped to publicize a number of important issues that are related to setting policy and designing programs in the member agencies. For many years, the Forum was cited by OMB staff as a model for interagency cooperation. Since the Offices of aging-related statistics established at Census and NCHS have undergone major changes in staffing and operating milieu, in FY 97 ODA initiated an external review of these offices and of the Federal Forum with a view to re-engineering these efforts in order to operate efficiently in an era of constrained resources. The plan to re-engineer the Forum and associated Offices at Census and NCHS was presented as interagency agreement proposals in the FY 98 Sourcebook (which were approved and funded), and was the subject of an extensive memo to the Director, NIA. See the FY98 Sourcebook for a fuller description of the ODA/Forum review. Following the recommendations of the external review panel, ODA gained approval for a limited term FTE devoted to the Forum and associated statistical issues (Forum Executive Officer), funded through an interagency agreement to NCHS. This IAG also provides funds for logistic support for Forum meetings, and report preparation and publication. We expect that the Forum Executive Officer, Dr. Kristen Robinson, will be detailed back to NIA on occasion and also to the various participating Forum agencies. Dr. Robinson will also be helping manage all of the interagency agreements funded or proposed by ODA.

NIA's ongoing activity in costs of aging-related illness has positioned NIA to provide information, through a combination of grants, contracts and Professional Services Contracts, relevant to the NIH and IOM following the recommendation that "In setting priorities, NIH should strengthen its analysis and use of health data, such as **burdens and costs of diseases**, and of data on the impact of research on the health of the public." The COI supplement to the Duke Center (approved by the NIA Planning Group) was made to the Duke Center in FY 98 and a report of their activities is included in the status report of the Demography Centers. The draft NCHS report, *Medical Care Expenditures by Diagnoses: Estimates, Data Sources and Methodology* from Thomas Hodgson (with special emphasis on diabetes) was received and sent

to a number of reviewers (see FY 98 Sourcebook for a report of the findings). Dr. Hodgson has several journal submissions pending and an NCHS Series Report is planned (see the IAG progress reports section). Several new interagency agreements related to the cost-of-illness initiative were funded in FY 98, some in association with OSP/OD. These included a project with Dr. Hodgson on medical care expenditures for circulatory diseases, projects with WHO on the global burden of disease and global burden of diabetes, and a project with the OECD to compare treatments and costs for various conditions prevalent in the older population.

ADULT PSYCHOLOGICAL DEVELOPMENT (APD) supports research concerned with environmental, social, and behavioral influences on cognitive functioning, personality, attitudes, and interpersonal relations over the life course. **Staff**: Jared B. Jobe, Chief; Manuel Miranda, Health Scientist Administrator (retired on 12/31/97); Jane Berry, IPA, 40% (started as of 7/98); Merry Ward, 100%, Summer Intern (end 11/30/98); Angela Lingham, Grants Technical Assistant.

The **Cognitive Functioning and Aging Section** focuses attention on cognitive functioning and how external factors such as structure of the task and internal psychological process such as motivation and emotional state influence differences among people and affect a person's functioning over the life course. Examples of topics are: Perceptual skills and memory strategies; reading, hearing, and speech comprehension; individual differences in cognitive functioning, behavioral genetics; problem-solving and decision-making (e.g., expertise); interplay between health and cognition; interplay between cognitive and social factors (e.g., affects of attribution on cognitive functioning); social cognition; cognition in special populations (e.g., mental retardation); and interventions (e.g., training) to maintain or improve cognitive functioning; interplay between biological and behavioral factors. Also included is research to develop standardized methods of cognitive assessment and general methodological research.

The **Personality and Social Psychological Aging Section** emphasizes the dynamic interplay among psychological processes and personal relationships in the immediate social environment as people age. Examples of topics in personality are: Personality stability and change; personality and health; environment and genetics; measurement; and theory. Examples of topics in social psychology are: Stress and coping behaviors; social cognition (e.g., meta-cognition, collaborative cognition); attitudes, beliefs, and attributional processes; emotion and affect; motivation (goal-directed behavior); life course transitions (e.g., bereavement); life satisfaction; productive behaviors; self-concept; perceived self-efficacy and its consequences; interpersonal relationships (work, friends, and family) in mid-life and old age; and social networks and supports. This section also explores how the above variables may mediate relationships among variables such as gender, race, socioeconomic status, and health and effective functioning over the life course.

DEMOGRAPHY AND POPULATION EPIMDEMIOLOGY (DPE) supports research and training on the changing older population in regard to its social, demographic, economic, and health characteristics and on the impact of these population characteristics on society as a whole. National and international comparative research is encouraged. **Staff**: Vacant, Chief (75%); Georgeanne Patmios, Program Analyst (70%); Donna Perry, Program Coordinator (60%); Simon Law, STEP, 40% (resigned as of 5/98) %; Teresa Bladen STEP, 38% (started as of 6/98).

The Health and Retirement Economics Section (Vacant, HSA) concentrates on all aspects of economics of aging, including but not limited to: the economic costs of disability (including

Alzheimer's disease and related dementias) and cost-effectiveness of interventions; economic antecedents and consequences of retirement; economic intervention programs, e.g., pensions; income distributions, productivity, savings, consumption and housing costs; intergenerational transfers; long-term care-related spend-downs; labor force participation rates; and international comparisons of the impact of disability, pensions, income replacement, and taxation policies on older people.

The Demography of Aging Section (Vacant, HSA) embraces such topics as: medical and bio-demography; life expectancy and active life expectancy; socioeconomic differentials in mortality, morbidity, and disability; migration and geographic concentrations of older people; rural-urban comparisons; changes in the age-structure of populations, cohort flow; modeling and forecasting of age-related processes; and demographic description and methodology.

The Population Epidemiology Section (Georgeanne Patmios, Program Analyst) focuses on the epidemiological transition (i.e., the shift from acute to chronic diseases) as people live longer: Prevalence, incidence, and age trajectories of health; competing risks; forecasting of functioning, disability, morbidity, and mortality; distributions of health services and the long-term care system; race, ethnic, and socioeconomic variations; and the epidemiological transition in developing countries.

SOCIAL SCIENCE RESEARCH ON AGING (SSR) supports research and research training aimed at understanding the biopsychosocial processes linking health and behavior as well determinants and consequences of particular health care organizations and other social institutions that influence the health, well-being, and functioning of people in the middle and later years. **Staff**: Marcia G. Ory, Chief (80%); Sidney M. Stahl, Health Scientist Administrator; Pauline Sieverding, Summer Intern until 8/31/98, now 60% STEP as of 9/15/98; Richard Hoffman, Summer Intern (ended 9/11/98); Michelle Blanco, Grants Technical Assistant; Anthony Cheung, STEP (resigned as of 8/98); Rick Leung, STEP (from 6/98 to 9/11/98).

Program staff is committed to communicating more fully the content and mission of this Branch, to setting scientific priorities for future initiatives, and to enhancing the research and training infrastructure. Toward these ends, several actions are proposed in a staged approach over the next three to five years.

Clarifying Research Content within SSR/BSR

As an immediate action, the number of sections will be reduced from three to two so as to provide clarity in describing Branch activities. This action provides a clearer presentation of what is currently in the research portfolio and is not a change in areas covered. Informal feedback from colleagues both within NIH and the scientific community suggests the following changes: a) renaming the Psychosocial Geriatrics Section to “Aging and Behavioral Medicine” (ABM) and b) consolidating the Health Care Organization Section and the Older People in Society Section to form a single new section called “Health Care Organization and Social Institutions” (HSI). We are in the process of drafting materials to describe the range of scientific content in these two proposed sections.

Setting Priorities for New Research Efforts/Directions

Within the next six to twelve months, we will host at least one and perhaps several meetings with social scientists conducting research in the area of gerontology to reflect on issues such as: a) major research accomplishments and new knowledge within SSR’s area of responsibility; b)

current research gaps and scientific opportunities; c) the formulation of initial plans for future initiatives; d) the identification of promising researchers in other areas who can be drawn into our area; e) infrastructure needs to attract and maintain excellent researchers (e.g., Centers programs or institutional training efforts); f) linkages and boundaries both within and between SSR areas of research and related areas (e.g., social psychology; demography; epidemiology; or economics); and g) recommendations regarding needed staff and areas of expertise to address adequately any recommended areas.

As an interim strategy, we will work with OBSSR to obtain input from two NAS/IoM efforts that are currently proposed. The first group will update the landmark 1982 study on Health and Behavior: Frontiers of Research in the Biobehavioral Sciences. A second NAS study will focus on Future Research Directions for Behavioral and Social Sciences Research at NIH. We will share materials and seek advice from committee members.

As a longer-term strategy, after evaluating the scope and benefits of the above activities, we will evaluate the benefits of requesting that an IoM/NAS committee be established to address SSR's areas of responsibility. We anticipate a two to three year time frame for this latter activity.

Identification of New Areas for Development

New areas of highly promising knowledge are developing rapidly in the social sciences. As part of the proposed evaluation process described above, it will also be necessary to examine which areas can be most realistically pursued. SSR/BSR staff will need to evaluate carefully which, if any, current activities or plans can be de-emphasized in order to free time and resources for the development of new areas (e.g., incorporation of more social sciences research into the current AD centers structure; physiological mechanisms linking health and behavior; older workers). In turn, SSR/BSR needs to consider which new areas of possible emphasis will require additional resources.

Proposed Changes for SSR Sections by SSR Staff are:

The Aging and Behavioral Medicine (ABM) Section (Marcia Ory, HSA) is specifically focused on examining the dynamic interrelationships among aging, health and behavior processes. This section expands traditional studies in behavioral medicine, by adding an aging perspective as well as being concerned with the influence of the socio-cultural environment on the development and maintenance of a wide range of health and illness behaviors (e.g., healthy lifestyle practices, medical self management, doctor patient interactions, and coping with chronic illnesses and disabilities). Major research areas include: 1) psychosocial epidemiology; 2) disease recognition, coping and management, including physiological consequences of life stresses and burdens; and 3) social and behavioral interventions for interventions for health promotion, disease prevention, and disability postponement. Although psychosocial processes are examined across a range of conditions, the role of social and behavioral psychosocial factors in both Alzheimer's disease and AIDS is highlighted. This section provides leadership for crosscutting topical areas such as: 1) self-care in later life; 2) medications and the elderly; and, 3) religion, health and aging.

Replaces:

The Psychosocial Geriatrics Research Section (Marcia Ory, HSA) is specifically focused on social and behavioral factors as they influence the health and physical functioning of people as they age. Representative topics include: Psychosocial predictors (i.e., behavioral epidemiology) of morbidity, functioning, mortality; psychobiological linkages between health and behavior;

preventative self-care behaviors and health behavior change; illness behaviors and coping with chronic conditions and disabilities; assessments of quality of life outcomes, especially for frail, cognitively impaired older persons; social and behavioral interventions to promote health, prevent illness, or manage disabilities (e.g., injury and frailty prevention, early detection of cancer**,** HIV/AIDS prevention; reducing burdens of Alzheimer's disease**)**; and social and behavioral factors in gender differences in health and longevity.

The Health Care Organizations and Social Institutions (HSI) Section (Sidney Stahl, HSA) supports research on wide range of formal health care and related services, as well as on the structure, processes, and outcomes of different formal care systems on the health of older persons. It also examines the social conditions influencing health outcomes in the later years and the ways in which people influence and are influenced by the network of cultural and social institutions in which they grow older (e.g., family, community, work place). Topics for research include: Health Care Organization (the structure, organization and delivery of health care; processes of care; consequences of care in various organizational structures such as hospitals, nursing homes and home care; intra and inter-organizational linkages); Social Institutions (family; work; and other institutions, e.g., community, housing, education). This section provides leadership in crosscutting issues such as elder abuse, end-of-life care and minority aging.

Replaces:
The Health Care Organization Section (Sidney M. Stahl, HSA) supports research and research training on the antecedents of a wide range of formal health care and related services, as well as on the structure, processes, and outcomes of different formal care systems. Representative topics include: Basic social science research on health care organizational change and behavior and its impact on aging and service delivery in an aging society; antecedents of health care use (e.g., doctor visits, hospitalizations, home health care, institutional care); the structure, processes, and outcomes of different patterns of health-care and related social services; provider-patient interactions; movement of older people among different health-care organizations and settings of care; the nature and effectiveness of new and evolving forms of home and community-based care services for older people and their families; behavioral, social or environmental strategies for improving institutional care; new models of integrated medical and social care (e.g., assisted living facilities; continuing care retirement centers); international comparison studies of health care organizations and delivery systems. **AND**

The Older People in Society Section (Sidney M. Stahl, HSA) is concerned with how, and with what consequences, people are influenced by the network of social institutions in which they grow old. Moreover, it encourages research on how these institutions are, in turn, affected by older people themselves. The primary focus is on family, work and health care institutions. Topics of interest include: Changing family organization and structures, intergenerational relationships in families and the community; family conflict, elder abuse, and family dysfunction; special roles in later life (e.g., grandparenting); the relationship between work roles and family roles in later life; informal (family) caregiving and community living arrangements; educational, religious, welfare, political, and other social organizations and aging; friends, neighbors, and other social support networks; influence of race and ethnicity on older people's roles (e.g., minority aging); and cross-cultural studies of the status and roles of older people, including issues related to death and dying.

The **COORDINATING UNIT ON BURDENS OF CARE FOR ALZHEIMER'S DISEASE** (Marcia Ory, 20%) was established in FY 1989 to coordinate all behavioral and social research on Alzheimer's disease and related disorders (ADRD). It provides an identifiable point of contact for interaction within the NIA as well as with the outside community. Its mission is to summarize research findings and to develop and implement a research agenda on topics such as: studies of the burdens of family care; interventions to enhance everyday functioning and reduce family caregiving burdens; and the effects and the costs of different long-term care arrangements.

Progress Report. NIA-sponsored research (over 50 funded research projects in this area) examines the extent, causes and consequences of the heavy burden of caring for people with ADRD. The current *NIA Burdens of Care for Alzheimer's Disease Research Overview* has recently been updated. Current activities center on two highly visible activities: 1) the *Special Care Unit (SCU*) initiative, a set of ten collaborative projects that examines the nature and effectiveness of care in institutional settings, and 2) *Resources for Enhancing Alzheimer's Caregiver Health (REACH),* a six site collaborative effort to test the effectiveness of different home and community-based interventions for helping families provide care to loved ones with mild and moderate dementia.

SCU: Analyses from the National Evaluation of Special Care Units (Leon, U01 AG10317, *Journal of Mental Health and Aging*, 1997) reveal a three-fold growth in the number of SCUs in licensed nursing facilities in the past decade. As of 1996, nearly one in four nursing homes had at least one organized dementia care unit, wing or unit or program. While SCU effects are not as great as expected, several of the collaborative studies have documented positive impacts on resident's behavior and social interactions.

REACH: Using a common core assessment battery, REACH is examining the effects of psychoeducational support groups, behavioral skills training programs, family-based systems interventions, environmental modifications, and technological computer-based information services in Caucasian, Hispanic, and African-American families in Alabama, California, Florida, Massachusetts, Pennsylvania, and Tennessee. Further descriptions of REACH interventions, populations, measurements and outcomes of interest can be found in the 1998 Progress Report available on the REACH home page (http://www.edu.gsph.pitt.edu/reach). Recruitment has been the major issue over the past year, and most sites are now meeting their recruitment goals. Preliminary outcome data will not be available until 1999. Under the leadership of Richard Schulz at the Coordinating Center, REACH investigators are preparing an Oxford University Press book on *Intervention Approaches to Dementia Caregiving*. Substantial scientific activity in the past year has centered on developing a common metric for understanding the relative influence of different intervention strategies.

Costs of dementia care. More precise estimates of the direct cost of Alzheimer's care are now available showing that cost savings are possible if the disease process is slowed and alternative residential settings are used. Leon and associates (with partial funding from U01 AG10317, *Health Affairs*, 1998) extrapolated costs from a large multi-state sample of 679 Alzheimer's disease patient/caregiver pairs. These investigators were able to get more precise costs estimates than previously available by calculating informal and formal care services in different care settings by disease stage, co-morbidity status, and service setting. In 1996, annual per patient costs for mild, moderate, and severe patients were estimated at $18,408, $30,096, and $36,132, respectively. Analyses modeling the costs of care suggest that large cost savings could be

achieved if more AD residential patients were served in assisted living facilities rather than nursing homes ($11,028 per annum per patient). Further analyses show that cost savings are also possible if treatment regimens can reverse or delay AD progression, particularly if they delay residential placement. For example, an intervention that delays placement for six months could lead to a savings of over $12,000 while a delay of one year would save over $24,000 per patient. While significant savings in total costs of care (formal and informal) can be achieved if interventions can delay the rate of decline in memory and physical functioning, the researchers caution that family caregivers may carry extra burdens unless supportive programs or resources are directed toward them.

Physiological impacts of dementia caregiving. Chronic stressors are hypothesized to impact health outcomes by causing physiological changes associated with the development of chronic diseases and/or by increasing health impairing behaviors that can also accelerate disease progression. Recently, researchers have set out to fill gaps in our understanding of psychophysiological responses (e.g., changes in immune function, impairments cardiovascular systems, etc.) to chronic stress, as in caring for a spouse with Alzheimer's. These studies are suggesting that there is not one generic response to caregiving burdens, but that certain caregiver characteristics (being male), caregiving tasks (constant care with no respite) or the presence of co-morbidities (having CHD) make particular caregivers especially biologically vulnerable to the stresses associated with dementia care. [Vitaliano and associates (R01-AG10760; R01-AG11143, *Health Psychology* and *Journal of Psychosomatic Medicine*, in press) and Grant (R01 AG15301, Abstract, *American Psychosomatic Society*, 1998)]

Future Program and Research Activities:

- This next year of the SCU initiative will be devoted to cross-site and meta-analyses. Building on findings emerging from the SCU Initiative, investigators have received additional funds for the translation of research into a WWW information site (http://www.WRESCU-NAC.org) that can be accessed by nursing home administrators and policy makers. Future research recommendations include going beyond the SCU/non-SCU dichotomy to test the effectiveness of different best care practices identified in the SCU initiative.
- These efforts are being complemented by two NIA studies examining the outcomes of residential care for persons with dementia using similar measures as those developed in the original SCU initiative.
- Using dementia care in general and the REACH interventions as a specific case example, program staff is planning a series of working group meetings to explore conceptual and methodological bases for psychosocial intervention approaches to health challenges. Investigators are adapting statistical optimization approaches derived from the engineering field to examine different intervention inputs and outputs.
- Two other promising research opportunities have been identified for future development: 1) the caregiver's role in clinical trials for AD drug management; and 2) the integration of caregiver and health services research questions into NIA Alzheimer's Disease Centers.
- While greater attention to research on the physiological consequences of caregiving stresses and burdens, and the role of mediating factors, is desirable, more intensified efforts in this area call for additional program staff expertise in psychoneuroimmunology.

AIDS WORKGROUP: ACTIVITIES AND RESEARCH ADVANCES

Since 1987, the National Institute on Aging has spurred research to understand the influence of AIDS in an aging society (Riley, Ory, and Zablotsky, 1989). The degree to which AIDS/HIV has affected older people has received scant attention in the U.S. despite the rapid growth of new cases in the 50 plus population. A new report (Ory and Mack, *Research on Aging*, 1998) summarizes the latest findings on trends in national surveillance rates, transmission routes, and risk factors for middle-aged and older people. In 1997, there were over 60,000 people diagnosed at aged 50 and older with AIDS. From 1982 to 1997, the 50 plus population has accounted for 10% of the cumulative AIDS caseload and now accounts for 15% of the living AIDS caseload. The 22% increase in new AIDS cases from 1991 to 1996 among the 50 plus population was particularly notable for women, and for those whose risk was from heterosexual contact and injecting drug use.

Progress Report. An NIA-wide Workgroup on AIDS and aging was established in 1995 to strengthen and coordinate research in this area. Several activities have been undertaken towards these ends: 1) in 1997, NIA also sponsored a research synthesis and agenda setting conference on AIDS Prevention and Care Research to identify the most promising research avenues: 2) in 1997, NIA spearheaded a new trans-NIH program announcement on Behavioral Sciences Issues in Prevention Research; 3) in 1998, NIA participated in the trans-NIH RFA on human immunology and AIDS issues (two will be funded), and 4) NIA now lists AIDS research as a focal bullet in its small grant program to provide needed pilot testing and intervention development (three new projects were funded in FY 1998). The NIA AIDS and Aging Brochure that describes current research activities and priorities in the behavioral and social sciences has been updated. Workgroup members (both extramural and intramural) have also submitted proposals to OAR/NIA for FY 2000 funding.

Research Advances.

Older people's common sense model of illness may lead to delays in getting tested and seeking treatment for HIV/AIDS. Despite behaviors that placed them at risk for HIV/AIDS, older people often fail to recognize their vulnerability and attribute symptoms to other illnesses or age-related changes (e.g., hypertension, menopause). Even when tests identify them as sero-positive, some do not seek medical care because they feel healthy. When they do experience symptoms they think might be AIDS-related, older people express concern about their ability to differentiate symptom cause from aging processes, the HIV infection or some other co-morbid condition. These findings are particularly problematic since current consensus on treatment effectiveness suggests treatment must begin as early as possible. More concerted efforts must be made to elucidate the public about the importance of recognizing risky behavior as the impetus for seeking testing and treatment rather than waiting for the onset of symptoms. Greater attention must also be made in sensitizing and educating health care providers to the particular problems older people who are at risk have in trying to attribute cause to the various symptoms they may experience. (Siegal, R01 AG13379).

In comparison to younger caregivers, older caregivers of persons with AIDS (PWA) seem better able to draw upon personal and social resources to help them manage caregiving demands. Older caregivers are less likely to experience feelings of overload, frustration and depression. In comparison to other groups, mothers do not appear to be more distressed with caregiving responsibilities but do tend to remain more preoccupied with memories of the deceased even after 4 or more years of bereavement. These findings suggest the need for broader conceptualizations of the caregiving experience to examine how life course factors affect the

caregiving relationships and subsequent outcomes. Causal factor explaining the differences between younger and older caregivers have not been clearly identified, although several reasons can be suggested (e.g., generational expectations about caring for those in need, life stage issues related to illness and, the stigmatization associated with this particular illness and mechanisms for coping). Research in this area provides important opportunities for broadening our understanding of the caregiving experience by identifying variation in caregiving meanings and styles among groups and examining the extent to which differences are influenced by social and historical factors (Mullan, R01 AG12910).

Future Directions. Research in this area is important because it is not singularly focused on epidemiological studies to identify the extent to which the problem has affected various groups of older people. It requires a blend of qualitative and quantitative methodologies that are theoretically-driven to identify and understand (a) who is at risk and determine how these health and behavior determinants are influenced by age, gender, race and life course differences; (b) the social, psychological and behavioral implications of HIV/AIDS on the person with AIDS (PWA) and family and friends who provide assistance, and; (c) the extent to which health care services are available and accessible to and used by the older PWA. There is also a need to advance research knowledge in the development of interventions that incorporate educational and behavioral change strategies to increase age-related knowledge about AIDS, reduce risky behaviors and encourage older people to seek testing and medical treatment sooner rather than later, as well as to enhance medical and social supports for those in need. Complementing this emphasis on behavioral and social research, NIA is also establishing priorities for research in the clinical and biological sciences.

C. Highlights of Major Scientific Advances

ADULT PSYCHOLOGICAL DEVELOPMENT

Cognitive Functioning of Older Drivers. In order to identify unsafe older drivers, research is needed to identify impairments and medical conditions that significantly elevate older drivers' crash risk. Owsley, Ball, and colleagues (AG11684) found that older drivers with a 40% or greater impairment in visual processing deficits, as measured by the Useful Field of View (UFOV), were 2.2 times more likely to incur a crash during the three-year follow-up period than older drivers with a less than 40% impairment in UFOV. The UFOV measures visual processing speed, and selective and divided visual attention skills. In another study, Owsley and colleagues found that restricted UFOV and glaucoma were the only significant independent predictors of injurious crash involvement. Moreover, UFOV was the only significant predictor of non-injurious crash involvement. Ball (AG07539) conducted a series of experiments examining the ability to train speed of processing relevant to driving and traditional cognitive task performance. Training resulted in significant improvement on the UFOV and on the IADL tasks, but not on the cognitive tests of speed and other abilities. These results indicated that speed of processing can be trained and that it generalizes to everyday tasks such as driving and IADLs.

Context-Sensitive Cognition. The immediate context of cognition – including its social composition, the nature of the task, and the goals, knowledge, motivation, and skills brought to the context by the individual -- can influence the outcomes of cognition. Research from this perspective suggests that cognitive abilities in adulthood do not decline or decrease uniformly but rather, vary according to the demands of the task and context. McEvoy (AG13973) found that older and younger adults produced false memories with equivalent frequency, even though typical negative age differences on memory for real events (i.e., presented words) were observed.

Hertzog (AG13148) found that when subjects are asked to assess whether individually presented words are learned or need further study, older and younger adults are equally accurate at this assessment. Moreover, the time those subjects allocate to each word for initial and subsequent restudy does not vary by age group. Hertzog concluded that these metacognitive monitoring abilities (e.g., study time allocation, prediction accuracy) remain intact in older adults. In a related vein, Wingfield (AG04517) found that when older adults were either given extra listening time, or, were allowed to control speech input, memory for spoken material improved greatly. These results suggest that older adults are sensitive to and can monitor contexts to enhance their learning and memory.

Inhibition Failure in Memory Formation. There are frustrating, and sometimes life-threatening, consequences when older adults receive wrong, or to-be-forgotten, information and then are unable to forget the information. One of the intriguing paradoxes among current research findings on memory and aging is that memory decline appears to be accompanied by a failure to forget or a failure to inhibit irrelevant thoughts and actions (Hasher AG04306). Contrary to powerful experimental results implicating a decreasing working memory capacity, Hasher interprets her recent results to indicate an inability to delete or inhibit information from the memory system; therefore, information clutters memory, making it difficult to create new memories or making it likely to confuse new information with recently learned information. Similarly, Hoyer (AG1145) and Kramer (AG14966) refer to the need to inhibit one task for another when switching cognitive tasks. In findings that have practical implications, Kramer (AG 14966) reports that with little training older adults show an enduring reduction in an age-related increase in switching costs. Theoretically, there is a need to explain the seemingly conflicting causal mechanism models of memory decline in aging, the working memory capacity decrement model and the decreasing ability to inhibit irrelevant information model.

Psychological Strength and Vulnerability in Adulthood and Late Life One of the long-term effects of psychological trauma is an increased vulnerability to the adverse effects of later trauma (Aldwin AG13006, Krause AG09221). Specific causal models for psychological strength and vulnerability, which have implications for intervention, are being developed that will increase our understanding of how psychological processes are related to physiological processes and health outcomes. It is the combination of early trauma and recent stress that predicts current increased mortality risk (Krause AG09221) and, similarly, the additive effect of a non-combat related trauma predicts physical health of men who have been in combat (Aldwin AG13006). Psychological resilience in spite of multiple adversities is associated with protective factors such as socioeconomic advantage, coping strength, strong social ties (Labouvie-Vief AG09203; Ryff AG13613), current happy marriage (Friedman AG08825; Labouvie-Vief AG09203), and positive early familial ties (Labouvie-Vief AG09203). Personality factors, which may be a result of early trauma, such as hostility, impulsiveness and low levels of trust and sense of control predict vulnerability (Aldwin AG13006, Barefoot AG09276, Friedman AG13006, and Mirowsky AG12393). To further understand immunity to psychological trauma, researchers should continue to use psychological causal modeling along with physiological data to further understand the roles of trauma, personality, and socioeconomic factors in physical vulnerability.

DEMOGRAPHY AND POPULATION EPIDEMIOLOGY

Biodemographic Trajectories of Longevity. Growth of the older population is fueled by three factors: the baby boom generation is growing older; the chance of surviving to old age is increasing; and, reduction in mortality among those who have already survived to older ages that is largely unexplained. See Hot Topics at the end of Section I for additional description.

Large Declines in Prevalence of Functional Limitations Occurred among Older Americans from 1984 to 1993. In the first explicit attempt to replicate Kenneth Manton's 1997 *PNAS* results using a different dataset and different measures of functional ability, Vicki Freedman and Linda Martin find equally large declines in the prevalence of chronic disability. Manton previously found a decline in chronic disability defined as ADLs and IADLs, of 1.1% between 1982 and 1989 in analyses of the 1982 to 1994 National Long Term Care Survey (NLTCS). Freedman and Martin used the U.S. Census' Survey of Income and Program Population (SIPP) and focused on functional limitations defined as difficulty in seeing, lifting and carrying, climbing, and walking. Compared to ADLs and IADLs which are individuals' self-assessments of their ability to carry out specific roles, Freedman and Martin's measures are less sensitive to changes in individuals' expectations about their ability to function independently or of the use of environmental modifications, such as assistive technologies. After controlling for changes in the socioeconomic and demographic composition of the population, Freedman and Martin find that declines ranging from 0.9% to 2.3% occurred in the prevalence of functional limitations among older Americans from 1984 to 1993. They also found that improvements in functioning in absolute terms where greatest among those 80 and older.

This finding is significant because it confirms Manton's dramatic and important findings using a different dataset and using measures which are less influenced by role expectations and living environments than the commonly used measures of ADLs and IADLs. Also, unlike previous trend analyses, Freedman and Martin explicitly factored out changes in the composition of the older population in a number of socioeconomic and demographic characteristics such as the aging of the population, shifts in marital-status composition, increases in minority populations, and the increase in educational attainment. They found that compositional changes explained only a small portion of the decline. This lends support to the position that physiological changes in capability underlie the trend toward declining disability. This implies that research is needed to learn more about the specific interventions and behavioral changes that can accelerate this trend.

Early Linguistic Ability Related to All-Cause Mortality in Late Life. Previous findings from the Nun Study suggested that low linguistic ability in early life has a strong relationship to poor cognitive function and dementia in late life, and to the number of Alzheimer's disease lesions in the brain. New analyses of autobiographies written by the study participants when they were 18 to 32 years old show that "idea density" in early life had a strong and consistent relationship to the rate of all-cause mortality in late life. A one-unit decrease in idea density in early life was associated with a 49% increase in the mortality rate. Low linguistic ability in early life may reflect sub-optimal cognitive and neurological development, which may increase susceptibility to aging-related declines and disease processes, resulting in a higher mortality rate late in life.

International Trends Toward Early Retirement Strongly Associated with Policy Incentives. In most countries of the world, people are both living longer and retiring younger. The combination of trends has placed increasing financial pressure on the public and private programs that support older persons, leading many analysts to question their future sustainability. In a paper published in the American Economic Review, Gruber and Wise show that across 11 developed countries, there is a strong correspondence between the age at which benefits are available and departure from the labor force. Not only do social security programs often provide generous retirement benefits at young ages, but private pension plans impose financial penalties on labor earnings beyond the ages of eligibility for retirement benefits. Also, Gruber and Wise

found that in many countries, disability and unemployment programs effectively provide early retirement benefits before the official social security early retirement age. This research shows that public and private pension systems have contributed to the decline in labor force participation of older persons, reducing the potential productive capacity of the labor force. Demographic trends suggest that the trend toward early retirement cannot be sustained. Changing the provisions of social security programs that induce early retirement should be reconsidered.

Health Care Spending Has Improved Health Outcomes. As much as there are concerns about medical expenditure growth, these increasing costs are also buying a different, and probably better array of medical care services. Research suggests that at least some of the improvements in health and longevity in recent years can be attributed to improvements in medical care. For example, essentially all of the increasing cost of heart attack treatment between 1984 and 1991 can be attributed to the increasing use of technologically intensive medical procedures. At the same time, life expectancy life expectancy following a heart attack increased from five years to six years. So it is likely that the new technology was not just more expensive, but also better (Cutler, R29-AG11223 and McClellan, R29-AG11706). Similar results have been found following treatment for hip fracture and stroke (Sloan, R01-AG09468). Between 1984 and 1994, real expenditures for hip fracture increased by 103 percent, and real expenditures for stoke increased by 51 percent. But improvements in Instrumental Activities of Daily Living (IADLs) were found in the period following treatment, and preliminary evidence was found that survival rates increased. One study estimates the value of health improvements between 1970 and 1990 to be over $100,000 per person (Cutler and Richardson, P20-AG12810). While not all of these health improvements can be attributed to improvements in medical care, this approach to analyzing medical care can provide a more balanced view of what we get from medical care, and not just what we spend.

The Strong Relationship between Health and Wealth. Recent research using wave 1 and wave 3 of the HRS finds that the median wealth of individuals who report "excellent" health in both waves is $232,000, compared with $178,000 among those who report "very good" health in both waves, $109,000 among those who report "good" health, $57,000 among those who report "fair" health, and $24,000 among those who report "poor" health (Smith, R37-AG12394). See Hot Topics at the end of Section I for additional description.

Kinship Resources for the Elderly. An important source of support and security in old age comes from one's family. Spouses and children provide the greatest level of support, but grandchildren and siblings also provide support in at least some families. New computer microsimulation methods have been used to forecast the numbers of biological and step-kin that older persons will have in the future (Wachter, R01-AG09781). One interesting result of this work relates to the changing fertility of the U.S. population, with the "Baby Boom" generation now providing a large number of adult children to support their elderly parents, but with an anticipated drop in the number adult children when that "Baby Boom" generation has itself reached older ages. This projected decline is partially offset by increasing numbers of step-kin and half-kin, caused by higher divorce and remarriage rates. Indeed it is speculated that the greater diversity of life experience caused by marriage, divorce, remarriage, cohabitation, shared custody and related relationships may enhance the capacity of families to cope with crises of caretaking and disability among aging family members in the future.

401(k) Plans and the Financial Status of Future Retirees. Recent research suggests that the asset accumulations in targeted retirement accounts (such as IRAs and 401(k) plans) will be increasingly important components of retirement support in the future (Poterba, Venti and Wise, P01-AG05842). In the mid-1990s, for example, at least one spouse in over 50 percent of families is eligible for a 401(k) plan and about 70 percent of those eligible contribute. Annual contributions to 401(k) plans now exceed $100 billion. Projections made on about future asset accumulations in 401(k) plans suggest dramatic increases in the financial assets of retiring households in the future. Among those reaching age 65 in 2025, for example, the average level of 401(k) assets is likely to exceed the discounted value of Social Security benefits. Thus their 401(k) plans could contribute more to their retirement support than Social Security. While these large financial asset accumulations are unlikely to be realized by families with the lowest lifetime earnings, 401(k) assets are projected to become a substantial fraction of Social Security wealth for families with lifetime earnings above the two or three lowest deciles.

SOCIAL SCIENCE RESEARCH ON AGING

Recent national caregiving survey confirms previous assumptions that dementia care is especially taxing. Drawing on telephone interviews with over 1500 family caregivers, the 1996 National Survey on Family Caregiving in the U.S. estimates that over five million American households provide care for someone with dementia or related symptoms. Secondary data analyses (Schulz, U01 AG13305) of this survey document the ways in which dementia care is different from other types of family caregiving. Dementia caregivers provide over 17 hours of care a week, compared to slightly over 12 hours of care provided by non-dementia caregivers. Additionally dementia caregivers are more likely to report providing constant care. These analyses further showed that caregiving had a greater impact on dementia caregivers in terms of time for other activities, family conflict, caregiving strain, the experience of mental and physical problems, financial hardship, and negative feelings. Greater perceived impacts for dementia caregivers remained, even after controlling for intensity of caregiving involvement and socio-demographic factors that might influence the experience of strain (e.g., gender, race, caregiver's age). These findings suggest the need to tailor programs and services to the unique challenges faced by dementia caregivers.

Advancements in medical technology have provided new and effective ways to manage and control chronic disease. Letzt and associates (R44 AG10750) have developed an innovative hand-held electronic reminder and counseling device and tested its use in 80 older adults who took between 3-12 prescribed medications. The system is capable of storing reminder information for up to 20 different medications as well as other health care reminders (e.g., exercises, MD appointments, and over-the-counter medications taken regularly). Elderly who used the device were significantly more likely to recall information and relate it to specific drugs such as the potential for drug interactions with alcohol, sun sensitivity, side effects (e.g. dizziness), etc. Use of the device was associated with reductions in patient's stress related to managing their medications as well as a 20% improvement in medication compliance compared with a 4% improvement for the controls. The development of such devices is important for optimizing the therapeutic value of medication regimens as well as insuring drug safety. This device is now available to patients enrolled in a large health management organization.

Organizational Influences on the Health and Well-Being of the Elderly *Numbers and training of nursing home staff contribute to resident morbidity and mortality through their impact on care and nutrition.* Kayser-Jones (AG10131) found several nutrition related factors, all associated with the organization and staffing of nursing homes, that impact institutionalized

residents' health: inadequate numbers and poorly trained and supervised nursing home staff; lack of ethnic food; undiagnosed swallowing disorders; and poor oral health. Because of chronic under-staffing and poor training, physician ordered oral supplements were found to be ineffective. Her research emphasizes the role that nursing home organization and staff training play in the health and well being of residents.

D. Status of Selected Program Activities

ADULT PSYCHOLOGICAL DEVELOPMENT

Behavioral genetics The rapid changes in science of genetics are just beginning to be appreciated by behavioral genetics researchers. That leading researchers in behavioral genetics are currently assessing the field presents NIA with a unique opportunity to attract leading researchers in this field to aging research. Molecular geneticists now generally agree that complex behaviors are not likely to be genetically simple. New techniques have developed that can track the developmental course of genetic contributions to behavior, identify genetic heterogeneity, and explore genetic links between the normal and abnormal. This collaborative endeavor by BSR, BAP, and NNA will assist the molecular and quantitative genetics fields contribute to behavioral genetics of aging. Last year a workshop and a symposium initiated this project. The workshop participants developed research agendas, and identified conceptual and methodological barriers to research on behavioral genetics and aging.

Social Cognition Across the Lifecourse Most research on cognition and aging has concentrated on context-free processes, such as speed of processing and working memory changes; insufficient attention has been paid to adaptive changes in cognitive skills, such as expertise that compensate for cognitive aging decrements, or how the two interact. In order to broaden our understanding of cognitive changes with aging, and ultimately to more effectively counteract cognitive changes with aging, more research is needed on social cognition topics, such as social schemas, motivation, emotion, life transitions, metacognition, and collaborative cognition. A series of workshops were held to stimulate additional research on these topics. Social cognition was included in the NIA and subsequently the BSR pilot project PAs for small grant awards (R03). The purpose of the R03 mechanism is to encourage mainstream social psychologists to collaborate with psychology of aging researchers in developing research ideas based on the workshop participants' consensus that communication between the two domains is problematic. A Program Announcement on social cognition was issued in FY 1997.

Standardized Measuring Instruments for Cognitive Aging In cognitive aging research, different studies use different instruments to measure the same concepts and different concepts of cognitive functioning. A second problem is that we don't know how different demographic groups perform on these measures and concepts. Background characteristics are often confounded with age differences in performance. The problem is made even more severe by the current emphasis on recruiting samples representative of the ethnic and gender composition in the region tested. As ethnic groups differ by region, there is no means by which the impact of these differences for data on cognitive aging can be assessed. These factors limit our ability to understand current theory and literature on how human cognition changes with age. These limitations could be overcome if a standardized cognitive measuring instrument would be used across studies. Such an instrument would permit: 1) comparison of results across different studies; 2) assessment of generalizations across populations; 3) comparison of results across different methods whether they arise from laboratory or survey methods; and ensure 4) that minimal information about cognitive functioning is available in all studies. In April 1996, NNA

and BSR jointly held a planning meeting at the Cognitive Aging Conference in Atlanta with 8 cognitive researchers. In September 1996, NNA and BSR jointly hosted a workshop bringing together a small group of experienced investigators to discuss the issues. The goals of the workshop were to: 1) clarify problems in the field that investigators are having when they seek to interpret their results in comparison with others; 2) ascertain which domains of cognition could be screened universally; 3) ascertain how much benefit and how much burden would adding an additional test be; and 4) clarify problems in adding data acquired from minority populations.

Personality in Adulthood and Old Age The evidence as to whether personality changes in adulthood and old age is equivocal. Some studies show that personality is remarkably stable across adulthood, whereas other studies indicated that personality could change in adulthood and old age. However, these studies differ on the personality variables assessed, the sample characteristics, and the period of the life span assessed. New analytic techniques offer insights into the controversy. The topic is an important one, because personality has been linked to morbidity and mortality.

DEMOGRAPHY AND POPULATION EPIDEMIOLOGY

Health and Retirement Study (HRS) and Asset and Health Dynamics Among the Oldest Old (AHEAD).

Data Collection: The 4th wave of data collection with the HRS sample and the 3rd wave with the AHEAD sample is currently being fielded (February-October 1998) as part of the combined HRS/AHEAD 1998 data collection. This combined data collection effort is re-interviewing the HRS and AHEAD original cohorts as well as collecting baseline interviews for the 1942-1947 (War Baby) cohort and the 1924-1930 (Children of the Depression Aging) cohort. As of October 1998, re-interviews have been completed with 9,341 of the original HRS cohort and with 6,272 of the original AHEAD cohort, for a response rate of 86% and 89.9%, respectively. In addition, 1,717 baseline interviews have been completed with the new War Baby cohort and 1,769 interviews with the CODA cohort.

Data Products/Enhancements/Dissemination: The HRS/AHEAD web site (http://www.umich.edu/~hrswww) was re-designed due to the increasing complexity of the site. The revised site was unveiled in February 1998 and has received much positive feedback. The public data releases of HRS Wave 1, AHEAD Wave 1, and HRS Wave 2 are all available from the website. AHEAD Wave 2 and HRS Wave 3 are currently available in preliminary release form as raw, unprocessed files via a registration process and password-protected FTP. A preliminary release of HRS 1998 will be provided within a few months of the close of data collection, planned for March 1, 1999. Constructed variables such as net worth and total income will be released as supplements to public releases as they are completed for each wave. Documentation for each HRS/AHEAD data set currently includes a data overview, standard ASCII codebooks, and "box and arrow" questionnaires that graphically depict the flow of the instrument. In the near future, an electronic concordance database will be provided as an aid for researchers to follow content longitudinally and across cohorts.

Work is also underway to make the HRS and AHEAD data sets more consistent. A second release of each public data set will be made available in 1999 that makes consistent identification variables, missing data, file structure, naming schemes, and distribution formats. An additional "tracker" data set will be produced that describes the entire sample in a single data file. Such a tracker file will not only track respondent status across time, but also serve as a bridge to be used

in merging various data sets together. Planned improvements to documentation and existing data sets should make data management less of a burden to users and promote longitudinal and cross-cohort analysis. The resulting consistency will provide the opportunity for more feasible consideration of future data products such as printed documentation, data sets on CD-ROM, and data extraction systems. A User Guide for the HRS/AHEAD surveys is under development.

Linkages: Signed permission statements are currently being obtained from respondents for linkage of their Social Security earnings and benefits records. All of these forms have been sent to Social Security for processing. Because of resource limitation, SSA has not yet made a commitment to link data from new cohorts to HRS and AHEAD. However, they are exploring mechanisms such as engaging an outside contractor to extract the data. SSA approved the merger of the public use version HRS Wave 2 data with the restricted Wave 1 Social Security administrative record dataset. Negotiations are underway to allow the same linkage with the public use version of HRS Wave 1, as is currently available on the web. Other achievements include SSA's approval to allow merger of the restricted HRS Social Security dataset with the restricted HRS pension plan dataset, as well as SSA's approval to allow a substitute set of conditions for the release of restricted data to research institutions that do not have an NIH Multiple Projects Assurance. HCFA has made a commitment to link Medicare/aid data for AHEAD respondents.

Forty six (46) applications for restricted data have been received. Of those, 29 have been completed and approved, with restricted data distributed to the applicant researchers. An additional 18 are in the final application stage. Several important issues with respect to HRS/AHEAD restricted data access are currently being addressed, including providing access to Federal Agencies and researchers without current federal funding; conducting audits; defining processes for re-certification or renewal of access; and continued considerations of respondent confidentiality. The programming services of a Certified Public Accountant familiar with the data have been contracted to debug and upgrade the pension software. Plans are now under development to distribute the pension calculation program freely from the website. The pension data are available for analysis under a restricted access protocol**.**
The development of an Employer Pension Plan Study (EPPS) to complement and update the 1993 data collection is well underway. The Panel Study of Income Dynamics (PSID) is planning a parallel study to be fielded in 2000, and HRS/AHEAD is working with the PSID in order to achieve some scale economies in terms of the data collection as well as the pension plan coding and data management activities.

User Survey: A multiphase survey of data users is currently being conducted. To date, responses have been received from 607 researchers registered to download the data. Of these, 290 said they currently use the HRS/AHEAD data, and an additional 234 plan to use the data. Approximately 143 users have produced papers or reports based on HRS or AHEAD data. About 105 have applied for research funding using HRS/AHEAD data, and 66 have received funding, primarily from NIA. About 166 plan to submit proposals using the HRS/AHEAD data. The final phase of the survey will be a detailed survey of a sample of the users and selected non-users to determine the successes and shortcomings with the data and data products.

Bibliography/Outreach: The current HRS/AHEAD bibliography, available on the website, holds 142 entries (102 published articles and 40 working papers). HRS/AHEAD staff members have attended GSA, ASSA, and PAA as exhibitors and will be attending APHA for the first time this year (November 1998). These conferences are also an opportunity for free distribution of special

issue journals, such as the Journal of Human Resources on HRS wave 1 or the Journal of Gerontology volume on AHEAD.

Workshops and Conferences: A 2-day workshop was held during the past year to discuss research on aging and dementia. Many notable researchers in the field of aging and memory were invited. The workshop yielded an AHEAD supplemental proposal -- the AHEAD Aging and Memory Study (ADAMS) -- a collaborative effort between the University of Michigan and Duke University to perform a clinical assessment of dementia on a subsample of 500 AHEAD respondents. Although the application was not successful, the workshop yielded new and innovative ideas.

National Long-Term Care Survey (NLTCS). The 1999 NLTCS is proceeding on schedule. The community pre-test was done in PIMA County, Arizona on 600 subjects. Additional nutrition and cognitive assessment/memory tests increased average pre-test length to 75 minutes. With reductions in questions, the estimated length is now 60 minutes and after debugging this should be further reduced. Since CAPI procedures are being used, preliminary files will be available rapidly, perhaps even 3 months after the end of the field period. The 1999 file could shortly thereafter be linked to the 1982, 1984, 1989, and 1994 files. A workshop on the topic will be held with participation from all BSR units. The major file being distributed is the 1982, 1984, 1989, and 1994 linked NLTCS. After three major edits the file is relatively clean. The available linked Medicare files extend from 1982 to 1995 and include both Part A and B. These data are currently being released by HCFA on CD-ROMs. In addition there are derived variable files where Duke recodes and provides additional sample weights generated from analyses. These allow reproduction of results from Duke analytic published papers. These have been used by ASPE, NBER, CBO, OECD, and a number of university researchers and actuarial firms. There have been over 60 requests for the data. A conference on the 1994 wave will be held in 1999.

International Activities. The 1997 Denver Summit communiqué called for increased comparative international data development and research on population aging with foci on retirement issues and, given a liberal reading, understanding the potential for accelerating the decline in disability. The effect of the language (coupled with the preceding expert committee work and attention to the GBD report, the declining disability within the U.S., and the analysis showing the impact of pension disincentives on labor force participation) has been almost spectacular. Several international organizations and some national governments elevated research on population aging on their priority ladders. At WHO, for example, aging is perhaps a year or two away from joining malaria and tobacco control as top cabinet (cross-cutting) issues. OECD, UNFPD, the UN Population Division, ECE, and EU have all begun to devote more resources to the aging issues. ODA has played a major role in getting different multinational and multilateral organizations to work together and in directing their efforts toward the effective development of the needed infrastructure. Through a series of interagency agreements ODA/NIA has stimulated research and data resource development at the OECD, UN Population Division, WHO, and the ECE, while grantee activity in several countries is also contributing to these ends. A contract with the NAS will lead to the development of a global research agenda for population aging, and perhaps an international White Paper on the topic supported by other national science academies. Although this effort was initially directed toward the industrialized nations with only a modest focus on the developing world, program staff visits to Foundations were partially responsible for two foundations providing support that will extend the NAS activity toward including developing countries that in many regions are aging rapidly. Staff

attendance at a WHO meeting further encouraged the start of an initiative aimed at developing countries.

Status of Selected Program Activities - Year 04 - NIA Exploratory Centers on Demography of Aging (P20) In four years of operation, the P20 Centers (UC Berkeley, U Chicago, Duke, Johns Hopkins, U Michigan, NBER-Harvard, U Pennsylvania, RAND and Syracuse) have altered the research and training environment in health, economics, and aging at their home institutions. Collectively they are now a national resource for data, analysis, and policy-related information. The key features of the P20 program are described below.

Data dissemination. Over the past 10-15 years, Congress and NIH have invested in several far-reaching national surveys covering health, long-term care and retirement. These surveys are now yielding rich data that can inform major policy decisions. Alerting researchers and making data available in user-friendly form is a major goal of the P20 organizations. Since 1994, P20 awards have made it possible to transfer data electronically from the HRS/AHEAD (based at U Michigan) and NLTCS (based at Duke) to any suitably equipped site in the country Other major datasets available electronically through P20 Centers include the PSID (Michigan), GSOEP (Syracuse), LIS (Syracuse), U.S. Mortality Estimates and Projections (Berkeley), Wisconsin Longitudinal Survey (Wisconsin/Michigan) and U.S. Census Files on the Elderly (Michigan). Information on locating the data is summarized in a special bulletin of *Aging Trends and Forecasts*, "Electronic Access to Demographic Data on Aging," and on the all-centers website: http://www.psc.lsa.umich.edu/meca/meta.html. To enhance use, centers also sponsor a wide range of courses, workshops, and pilot project awards. At Duke, the major elements of the GoM program for dissemination have been coded and assembled and are in the final testing model. Often these activities go beyond dissemination to stimulate new grant proposals and influence the content of future waves of the major longitudinal surveys.

Cost of Illness Supplement to the Duke Center. During this year, these funds supported a) the maintenance and dissemination of data for evaluation of policies affecting federal health expenditures under Medicare and Medicaid; b) health forecasts to predict future costs of illness for federal programs; and c) international health costs assessments. Special tabulations from the linked 1982-1994 NLTCS were prepared for the OECD for cross-national assessment of differences in functional status at late ages, the implications for changes in Social Security-style programs and their costs, and changes in national health expenditures for chronic disabling conditions. Raw and processed forms of the NLTCS were prepared for the CBO to forecast Medicare and Medicaid costs under different scenarios of chronic disease prevalence. These analyses focused on diabetes, osteoporosis, and heart disease. NLTCS data was provided to Westat to evaluate the level of costs (Medicare, Medicaid, family out-of-pocket care costs, institutional care costs, and costs of disabling conditions) for formal and informal care services provided to chronically disabled elderly. Analyses were prepared for the Assistant Secretary at the US Treasury Dpt. on the effects of tax credits for persons who manage the chronically disabled at home, and on what types of conditions could be managed at home so that institutional care and Medicaid costs might be reduced. Considered in this review were Alzheimer's disease, congestive heart failure, and cancer. These questions were followed-up with more detailed requests from the Tax Policy Office for precise estimates of the costs (and cost savings) of specific longitudinal (functional and health status specific groups) tax credits. Diagnostic problems in identifying conditions for such tax credit eligibility were discussed. Finally, forecasting programs were prepared for WHO to do health cost assessments for a number of countries. This involved both software development and the preparation of major

epidemiological databases. Costs were evaluated for specific risk factor interventions for heart disease, stroke, cancer, and diabetes.

Research briefs and other publications. Most centers have one or more regular publications that focus on aging. Several series have an explicit policy perspective, including: News on Aging at Hopkins, NBER Economics of Aging Publications and Working Papers, RAND Center for the Study of Aging Research Briefs, and Syracuse Income Security Policy Paper Series. Papers are mailed to a broad audience in academic and government settings. Last year the Centers were called on to brief the NIA Director for a meeting of ministers from the G-7 countries. The resulting set of short papers on health, economics and retirement formed the nucleus of a new *Research Highlights* series produced by the centers as a group and whose managing editor is Richard Woodbury of the Maine Center for Policy Research. Dr. Woodbury was formerly associated with the NBER P01. Two issues have been published in this new series entitled "Health Insurance and Retirement" and "Social Security Around the World."

Pilot Research. Centers earmark a portion of their funds for innovative research. Micro pilot project proposals are reviewed internally and funded at $5,000-$12,000. In FY 98 31 new micro pilot projects were funded by the centers. The program has been highly effective in encouraging innovation and attracting new researchers to the field. Micro pilot projects often lead to proposals for funding under the popular R03 mechanism or other type of formal support from NIH. Approximately 65 of the previously funded micro pilots were submitted for formal NIH support, about 40 of which have been funded as NIA R03s, R01s, R29s, K01s and P01 subprojects. Topics range across health, economics and demography, and reflect many NIA high-priority areas.

Interaction with NIA Training Programs. All of the nine Centers hold NIA training awards for pre- and/or postdoctoral students. Though the training programs have been designed independently of the P20 Centers, it is apparent that the two NIA programs have strong benefits to each other. Centers have promoted new courses and maintain a collection of syllabi that can be downloaded from the all-center website. Pilot project awards are attracting postdoctoral trainees to aging research at a critical stage in their careers. The Centers play a major role in the annual NIA Summer Institute on Demography, Economics and Epidemiology of Aging, held at RAND. Now in its fifth year, the Institute brings together advanced trainees and established researchers to discuss current topics in aging research and learn about new datasets and methods. Most participants, junior and senior, feel that the Institute is a powerful catalyst for the field.

This year, in addition to the NIA/RAND Summer Institute, a new seminar became available. NIA co-sponsored with the AARP Andrus Foundation and OBSSR, what we hope was the first annual RAND Mini-Med School for Demographers and Economists. The Mini-Med School was designed to educate demographers and economists who do research on aging issues, disease prevention and progression. Subject areas covered included genes, aging and longevity; cellular aging; Alzheimer's Disease; depression and bipolar disorders; and cardiovascular disease.

Coordination Across Centers. A hallmark of the P20 program is networking across the nine Centers. The Summer Institute is one very successful joint endeavor. Directors and support staff of various types (administrators, data managers, programmers) are linked by Internet groups to each other and the NIA Program Office. Directors meet at least once a year, and other face-to-face meetings have brought together administrators and data managers to share expertise. The Centers have developed standardized home pages on the World Wide Web with sections for

staff, research projects, data online, publications, and links to other sites in the field of aging. The 9 home pages are combined on an all-centers "metapage, " served by a custom search engine, which also scans the NIA/BSR home page. Michigan is working on creating a deluxe online publications database with search features that will give full access to outstanding collections of research papers and briefs produced at the Centers. Key fields, such as author, year, dataset used, or keyword will be used to search this central online database containing all publications produced by the Centers. This has proven to be more difficult than originally envisioned since each Center organizes its publications files in a different way. Michigan is working with the Syracuse center to "pilot" a system and plans a later meeting with Center librarians to fine-tune it. Other coordinating activities during the year included working with Dr. Woodbury on the new "Research Highlights" series and holding a meeting of people engaged in international survey research on aging.

Outreach to Non-P20 Institutions. The Internet has opened up many resources of the P20 Centers and made them available to researchers at non-P20 institutions. Other activities also reach a broad segment of the research community. Pilot projects can involve collaborators outside the 9 Centers. Seminar series sponsored by the Centers are often aimed at a regional audience. Many workshops on important topics and datasets are advertised nationally and attract participants from academic and government units around the country and overseas. Themes of some planned workshops and conferences include the impact of new biomedical technologies on costs and treatment efficiency (Duke), methodological issues in the design and administration of longitudinal surveys (Michigan), confidentiality (Michigan), chronic disease modeling (Johns Hopkins), and economics of aging (NBER). In this way the Centers are having important impact beyond their walls.

Future Plans. On September 25, 1998 the Centers recompetition was announced in the NIH Guide. The Centers will be recompeted as Research and Development Center Grants through the P30 mechanism. Applications are due November 20 and we hope to fund them at the May 1999 Council. We are considering the potential for collaboration with other BSR and NIA Centers.

SOCIAL SCIENCE RESEARCH ON AGING

Aging and Behavioral Medicine The scientific study of the interactions between health and behavior has been spurred by the establishment of behavioral medicine, an interdisciplinary field that integrates knowledge in the biomedical and behavioral sciences as applied to prevention, diagnosis, treatment, and rehabilitation of disease. NIA efforts have expanded the field of behavioral medicine in several critical ways by: 1) attending to aging processes and the special needs and problems of older people; 2) emphasizing the influence of the socio-cultural environment on the development and maintenance of health behaviors; and 3) specifying the component parts and dynamic nature of health behaviors and behavioral change mechanisms. Major research topics of interest include: psychosocial epidemiology; disease recognition, coping and management, including physiological consequences of life stresses and burdens; and social and behavioral interventions for interventions for health promotion, disease prevention, and disability postponement promoting healthy behaviors. A BSR/NIA report on aging and behavioral medicine describing research in this area and listing abstracts of funded grants is available upon request. Under this general research umbrella, several particular research themes have been specified, including attention to both topical areas (such as self-care in later life; doctor-patient interactions; medications and the elderly; religion, health and aging) and specific diseases and populations (e.g., HIV/AIDS; Alzheimer's disease; and women's health).

Aging and Health Care Organization The basic thrust of this initiative is to understand the complex interactions between changing health care systems, the needs of aging persons in an aging society, and outcomes resulting from senior's encounters (or lack thereof) with the health care delivery system. An invitational conference resulted in a summary report and publication (*Heath Services Research*, 1998;33:287-433) of major themes and research directions. Multiple grants have been funded in this area, including several co-funded with AHCPR. BSR has published a research agenda in *Medical Care* (1998;36:1123-1125), and has been working with colleagues in Germany with the intent of initiating cross-cultural research in this area. SSR has begun collaborative efforts with AHCPR, ASPE, and CDCP. Several areas of research are likely to be emphasized in this initiative: (1) research that reflects differences within and between managed care organizations as well as more traditional delivery systems; (2) research that examines the implications of the often abrupt transition to managed care for older persons; and (3) research on the effect of the availability and use of preventive, health maintenance, and health promotion services on older persons.

End of Life SSR/BSR participated in the development of a trans-NIH initiative (led by NINR/NIH) that will address end of life (EoL) research on issues such as symptom management, communication, ethics, decision making, and the context of care delivery for persons facing the end of life. To focus on issues of the elderly, SSR/BSR has also begun discussions with the Fetzer Foundation on jointly hosting an agenda setting workshop to establish a research agenda on the problems and issues of EoL care for the elderly, including: the role of the family in EoL decisions; hospice care; the medical culture surrounding EoL care; measurement issues for EoL research; and transitions between organizations and phases at the end of life.

Medications and the Elderly With chronic and multiple drug use becoming a reality, there are many more opportunities for medication misuse resulting either from patient non-compliance with medical regimens or physician prescribing errors. An understanding of the interaction of age, disease, and multiple medications on clinical effectiveness and adverse drug side effects is also critical. SSR/BSR is heading an Institute-wide Working group to define research gaps and priorities in this area. A new program announcement will solicit research to: 1) identify the epidemiological, social and clinical factors associated with medication use by older people; 2) assess social, behavioral, psychological and cognitive factors that play a role in older people's understanding of and adherence to medication regimens; 3) determine the role of medical and pharmaceutical professionals in facilitating or hindering proper use of prescribed and over-the-counter medications; 4) investigate interventions to improve medication adherence and 5) increase our understanding of biological factors which contribute to therapeutic outcomes in the use of medications by the elderly.

Minority Aging The BSR managed Resource Centers for Minority Aging Research (RCMARs) (five funded by NIA, one by NINR, and all receiving substantial support from ORMH) are performing at a level exceeding expectations in mentoring new investigators, providing national leadership on race/ethnicity sensitive measurement, and research on the recruitment and retention of minority elder subjects. The new Networks to Enhance Minority Recruitment to Aging Research program began September 30, 1998 and BSR's support on a continuing basis of the two Hispanic EPESE studies, originally funded by an NIA RFA, in addition to several other minority related projects are making significant progress toward understanding and rectifying minority/non-minority differences in health.

Work and Work Organizations BSR participated in an RFA/PA published by NIOSH (along with three other ICs) for research on older workers and is currently discussing the possibility of additional joint research cooperation. A BSR sponsored agenda setting Workshop (October 1997) will feed into a BSR-wide initiative on: retirement and economic factors; cognitive and human factors; the health consequences of the relationship between the older worker, his/her family, and the workplace; the mismatch between the desires of the worker and the needs of the workplace; the health related consequences of the exit/reentry phenomenon and of contingency employment, especially among older women; the effect on health of the increasing prevalence of continuous vs. interrupted careers; and the productivity, retraining, and retention of older workers.

SECTION II: SELECTED ONGOING PROGRAM ACTIVITIES

COGNITIVE FUNCTIONING OF OLDER DRIVERS AND PILOTS

Prepared by Jared B. Jobe

Significance of Program Activity

Older adults, their families, motorists, and state departments of motor vehicles are concerned about the ability of older adults to drive safely. Currently, many states do not have mandatory re-certification of drivers at regular intervals. The Federal Aviation Administration currently has a mandatory retirement age at 60 for commercial airline pilots. Research indicates that older drivers are more likely to have crashes, older drivers are more likely to be injured in crashes and older drivers and pilots are more likely to be killed in crashes. Nevertheless, large individual differences exist in driving and piloting abilities and the vast majority of older drivers and pilots have crash-free records. Many believe that guidelines for determining the appropriateness of driving and flying for older adults must avoid age-based rules so that older adults are not unjustifiably prevented from driving or flying. Research on older drivers and pilots conducted to date supports this view: Cognitive tests are more reliable predictors of crash than age.

Program Activity

Program staff continues to work with staff at the National Highway Traffic Safety Administration to promote research on older drivers and with the Transportation Research Board members to promote research on older drivers and older pilots. Meetings were held at the Gerontological Society of America convention and at the Transportation Research Board conference with researchers interested in older drivers and older pilots.

Research Advances

Research on older drivers. In order to identify unsafe older drivers, research is needed to identify impairments and medical conditions that significantly elevate older drivers' crash risk. Previous retrospective research by Ball, Owsley, and colleagues at the University of Alabama-Birmingham (AG11684) and Western Kentucky University indicated that visual processing deficits, as measured by the Useful Field of View (UFOV) are strongly associated with a history of driving problems. The UFOV measures visual processing speed, and selective and divided visual attention skills. Owsley, Ball, and colleagues (Owsley *et al.*, 1998) found that older drivers with a 40% or greater impairment in the UFOV were 2.2 times more likely to incur a crash during the three-year follow-up period than older drivers with a less than 40% impairment in UFOV. This association was primarily mediated by difficulty in dividing attention under brief target duration. Participants who reported driving less than seven days a week were 45% less likely to incur a crash than those who reported driving daily, indicating that they self regulated their driving. Sensory visual function was not associated with an increased crash risk, but rather the cognitive processing task of dividing visual attention that was the significant factor.

In another study, Owsley and colleagues found that restricted UFOV and glaucoma were the only significant independent predictors of injurious crash involvement. Moreover, UFOV was the only significant predictor of non-injurious crash involvement. Both of these predictors have been shown in previous research to be modifiable.

Cushman at the University of Rochester (AG08256) investigated cognitive factors in the safety of older drivers, both normal and those with early Alzheimer's Disease (AD). She found that a much great proportion of AD participants than normal drives were found to be below standards for the on-road driving assessment; AD participants performed poorer on all cognitive measures. AD participants made more on road errors, but had no more crashes in the three years prior to study enrollment. Higher annual miles driven, lower number of previous crashes, and increased performance on cognitive tests (UFOV, a test of general cognitive functioning, and a vigilance test) were the best predictors of good driving performance. These predictors worked equally well for AD and normal participants. The miles driven results are somewhat opposite to the results of Owsley et al. (1998).

Ball (AG07539) conducted a series of experiments examining the ability to train speed of processing relevant to driving and traditional cognitive task performance. In one study, older adults who received speed of processing training on UFOV demonstrated improved UFOV, better performance on the road sign test, and fewer dangerous maneuvers on the driving test compared to simulator-trained participants and controls. In another study, participants received either speed of processing training or no-treatment; these participants completed timed IADL tasks and a cognitive battery of tests. Training resulted in significant improvement on the UFOV and on the IADL tasks, but not on the cognitive tests of speed and other abilities. These results indicated that speed of processing can be trained and that it generalizes to everyday tasks such as driving and IADLs.

Research on older pilots. Li (AG13642) found that 27% of the pilots aged 50 and older who were involved in general aviation crashes were killed compared to 20% for pilots under age 50. Pilots above 50 accounted for 30% of all aviation crashes. Multivariate analyses revealed that the risk of dying in a crash for pilots 50 years or older was 1.7 times that for younger pilots. This finding is consistent with findings from studies of older drivers. Pilot gender, flight experience, principal profession, and type of aircraft were not associated with the likelihood of pilot survival (Li & Baker, in press).

Morrow (AG13936) is investigating whether expertise mitigates age declines in piloting when the task environment (e.g., air traffic control communication) supports the use of piloting knowledge. He found that, on a standard communication procedure of repeating an air traffic control message of instructions, expertise mitigated age effects. In another experiment, using longer messages, expertise did not mitigate age effects, possibly due to a large working memory load. Current research is attempting to identify when mitigation occurs on the message task (Morrow & Rodvold, 1998).

References

Li G., & Baker, S.P. Correlates of pilot fatality in general aviation crashes. (In press). *Aviation, Space & Environmental Medicine*.

Morrow, D., & Rudvold, M. (1998). Communication issues in air traffic control. In M. Smolensky & E. Stein (Eds.), *Human factors in air traffic control* (pp. 421-456). New York: Academic Press.

Owsley, C., Ball, K., McGwin, G., Jr., Sloane, M. E., Roenker, D. L., White, M. F., & Overley, E. T. (1998). Visual processing impairment and crash risk among older adults. *Journal of the American Medical Association, 279*, 1083-1088.

Future Directions

In the area of older drivers, interventions should be developed and tested to improve older adults' driving ability. Currently, the ACTIVE clinical trial is investigating whether cognitive interventions can improve older adults' ability to perform certain instrumental activities of daily living including driving. Additional future research should investigate whether an accurate and reliable screening battery that includes visual cognitive tasks, medication usage, mental status, and extremity problems can identify high-risk older drivers. The battery would be useful in evaluating interventions to reduce crash risk so those older adults may drive for as long as it is safe to do so. Another area of research should determine what degree of cognitive impairment should preclude driving.

In the area of older pilots, a key long-term goal is to develop an objective test battery of cognitive and other domains that can be used to identify which pilots are competent to fly commercial airlines past the current controversial age-based rule of 60, while maintaining public safety.

List of Funded Grants

AG05739, Karlene Ball, Improvement of Visual Processing in Older Adults
AG11684, Karlene Ball, Enhancing Mobility in the Elderly
AG08256, Laura Cushman, Cognitive Factors in the Safety of Older Drivers
AG11748, Sara Czaja, Miami Center on Human Factors and Aging Research
AG12388, Don Lassiter, Expertise and Age Effects on Pilot Mental Workload
AG13642, Guohua Li, Expertise and Age Effects on Pilot Mental Workload
AG13963, Dan Morrow, Expertise and Age Differences in Pilot Communication
AG14684, Cynthia Owsley, Vehicle Crashes, Injuries, and Older Drivers
AG11715, Denise Park, Michigan Center for Applied Cognitive Aging Research
AG09727, Dan Roenker, Perceptual Assessment Improvement of the Older Driver
AG12794, Melvin Shipp, Vision Screening and the Elderly Driver.
AG09774, Loren Staplin, Improved Navigational Efficiency for Older Drivers
AG08589, Pamela Tsang, Aging and Pilot Time-sharing Performance
AG12713, Jerome Yesavage, Age-related Longitudinal Changes in Aviator Performance

CONTEXT-SENSITIVE COGNITION

Prepared by Jane M. Berry

Significance of Program Activity

The immediate context of cognition – including its social composition, the nature of the task, and the goals, knowledge, motivation, and skills brought to the context by the individual -- can influence the outcomes of cognition. This is the claim of a social cognitive perspective on thinking, reasoning, decision making, information processing, and memory functioning in adulthood and old age (Blanchard-Fields & Hess, 1996). Research from this perspective suggests that cognitive abilities in adulthood do not decline or decrease uniformly but rather, vary according to the demands of the task and context. As a result, older adults may perform no worse than younger adults depending upon how tasks are structured and what are the individual resources brought to bear on task engagement and completion. This line of research challenges theoretical positions that portray cognitive aging as singular, decremental, and dependent upon underlying processing resources such as perceptual speed (e.g., Salthouse, 1991). Instead, much of the research emanating from the social cognitive perspective yields positive (e.g., Meyer, Hess) or equivalent (e.g., Hertzog, McEvoy) age differences on tasks as varied as reading comprehension to learning lists of words.

Program Activity

A workshop convened during the summer of 1997 brought researchers with social cognitive interests and research together to discuss current topics and future directions for social cognition and aging. The group met for 3 days at Stanford University and produced a program announcement describing targeted research goals and activities for this area.

Research Advances

Older adults rely upon stored knowledge in the service of current, ongoing cognitive processing, and may do so to a greater extent than younger adults. McEvoy (AG13973) varied the conceptual associations (from specific to nonspecific associations) to words in a word list presented for learning to younger and older adults. Whereas both groups relied upon their lexical knowledge base to retrieve word associations, older adults were more dependent upon this base, as demonstrated by greater age differences in word recall as the word associations became less specific (e.g., HOUSE as a clue for PAINT; ARTIST is a more specific clue for PAINT). These results were replicated in a study of false memories by McEvoy. False memories for events (here, a nonpresented but conceptually similar word) are greater when the events (words) occur in an unorganized, loosely related lexical base than in an organized, conceptually similar lexical base. Using this experimental manipulation, McEvoy found that older and younger adults produced false memories with equivalent frequency, even though typical negative age differences on memory for real events (i.e., presented words) were observed. These age-equivalent false memory effects are especially provocative given that they defy expectations of both experts and older adults alike: McEvoy conducted informal interviews of legal and mental health experts who believed that older adults would produce *more* false memories due to a tendency to fill in the gaps created by forgotten material. In contrast, older adults believed that older adults as a group would produce *fewer* false memories than younger adults because of poorer memory ability overall, i.e., for real and false events.

Research on reading comprehension indicates that characteristics of both the text and the reader influence text comprehension and recall. Older adults who demonstrated above-average recall of

narrative texts relied more upon the structure of the text to allocate study time than did older adults with below-average recall rates, and in a manner similar to study time allocation patterns of younger adults (Stine-Morrow, AG13935). Furthermore, expository texts produced poorer recall than narrative texts, leading Stine-Morrow to argue that narrative stories provide a well-known retrieval structure for integrating novel information encountered as one reads through texts. Meyer (AG09957) also identified components of texts that facilitate reading comprehension in older adults: Text that signals that upcoming information is important to attend to, and texts with topics of particular interest to the reader attenuate and even reverse age differences on text recall tasks.

When the learning context is highly constrained via controlled input of information, metacognitive processing differences between younger and older adults are minimized (Hertzog, AG13148). When subjects are asked to assess whether individually presented words are learned or need further study, older and younger adults are equally accurate at this assessment. Moreover, the time those subjects allocate to each word for initial and subsequent restudy does not vary by age group. Hertzog concluded that these metacognitive monitoring abilities (e.g., study time allocation, prediction accuracy) remain intact in older adults. In a related vein, Wingfield (AG04517) found that when older adults were either given extra listening time, or, were allowed to control speech input, memory for spoken material improved greatly. These results suggest that older adults are sensitive to and can monitor contexts to enhance their learning and memory.

Changing the context to allow older adults time to practice new tasks produces increases in their performance, sometimes raising it to the level of younger adults. Dixon (AG08235) reported that speed of performance on a variety of handwriting tasks improved for younger and older adults over 5 trials, with performance levels of initially slow older adults converging on the performance levels of initially fast younger adults. Kramer (AG14966) obtained similar results in a study of age differences in task-switching costs. Specifically, when older and younger adults are asked to switch between reporting the value of strings of digits presented on a computer screen and reporting the number of digits presented, older adults are initially slower, but become as fast as younger adults at switching after two to three 1-hour practice sessions.

In research grounded firmly in social cognitive theory, Blanchard-Fields (AG15019) and Hess (AG05552) demonstrate how “task” and “person” factors act jointly to influence complex cognitive processes and outcomes. In forming impressions about other, newly met people, older adults appear to process information more deeply than younger adults, who instead appear to form their impressions on a more superficial analysis of information provided (Hess). Thus, Hess concludes that older adults represent and use information about other people differently than younger adults, perhaps due to older adults’ more extensive social experiences that accrue over a lifetime. In another study, however, Hess found a more negative impact of aging on decision making. Older adults were more likely than younger adults to rely on previously presented, irrelevant information when making judgments of others (e.g., likability ratings). Blanchard-Fields reported that older adults often rely upon strongly held beliefs when making decisions about others, thereby bypassing effortful information processing but producing biased judgments. When, however, older adults are given more time to think about a situation (e.g., one in which a character violates a valued social rule), their judgments of the character are less biased. In another study, Blanchard-Fields found that older adults hold stronger beliefs about traditional social rules and younger adults hold stronger beliefs about nontraditional social rules, although both age groups contained both traditional and nontraditional belief holders. Taken

together, these studies suggest that processing information about people is connected to underlying beliefs, values, and knowledge structures that lead to either more accurate or more biased decision making by older adults, depending upon the demands of the decision task.

References:

Blanchard-Fields, F., & Hess, T., Eds. (1996). *Perspectives on cognitive change in adulthood and aging*. New York: McGraw-Hill.

Salthouse, T.A. (1991). *Theoretical perspectives on cognitive aging*. Hillsdale, NJ: Erlbaum.

Future Directions

With more sophisticated research questions (e.g., Hess's work on heuristic biases) and measurement techniques (e.g., Stine-Morrow's work on resource allocation), a greater understanding of the interface between cognizer and task variables is advancing. Although the parameters of contexts that influence cognitive processes and products are being identified and tested in aging populations with increasing frequency and success, there remain areas that are underdeveloped and in need of further research attention and effort. Specifically, research that measures the affective antecedents and consequences related to cognitive processing (e.g., Erber, Blanchard-Fields, Carstensen) should elucidate the socioemotional underpinnings of cognition. Efforts to identify and measure on-line cognitive processing (e.g., Hertzog, Kramer) will yield valuable knowledge regarding the metacognitive and executive control processes that guide cognition. Finally, research that focuses on the social nature of cognition (e.g., Carstensen, Fingerman) should advance our understanding of cognition that is built on interpersonal exchanges rather than isolated intraindividual processes. Future research that combines affective, metacognitive, and collaborative methodologies will bring the field closer to an ecologically valid view of adulthood cognition.

List of Funded Grants

AG14855, Monika Ardelt, Empirical Assessment of a Three-Dimensional Wisdom Scale
AG13508, Jane Berry, Memory Self-efficacy and Memory Performance in Adulthood
AG15019, Fredda Blanchard-Fields, Everyday Problem Solving in a Social Context and Aging
AG08816, Laura Carstensen, Social Interaction in Old Age
AG05808, Alison Chasteen, Mental Representations of Aging Effects on Memory
AG08235, Roger Dixon, Individual Differences in Memory Change in the Aged
AG06268, Joan Erber, Age and memory in perceptions of cognitive capability
AG14484, Karen Fingerman, Adults' Reasoning about Problems in Social Relationships
AG13148, Christopher Hertzog, Aging, Metamemory, and Strategy Use During Learning
AG05552, Thomas Hess, Schematic Knowledge Influences on Memory in Adulthood
AG12203, Art Kramer, Plasticity in Aging: Dual-task Training Effects
AG14966, Art Kramer, Aging and Dual-task Performance: Training Interventions
AG12113, Edward McAuley, Exercise, Aging, and Psychological Function
AG13973, Cathy McEvoy, Prior Knowledge Effects in Cognitive Aging
AG09957, Bonnie Meyer, Minimizing Age Differences in Reading – How and Why
AG15186, Samuel Pond, Adaptation and Goal Orientation
AG14111, Norbert Schwarz, Aging, Cognition, and Context Effects in Self-Reports
AG13935, Elizabeth Stine-Morrow, Age Differences in Resource Allocation during Reading
AG14533, Robin West, Memory Beliefs in Relation to Goal and Test Difficulty
AG04517, Arthur Wingfield, Age and Decision Strategies in Running Memory for Speech

INHIBITION FAILURE IN MEMORY FORMATION

Prepared by Merry Ward

Significance of Program Activity

One of the intriguing paradoxes among current research findings on memory and aging is that memory decline appears to be accompanied by a failure to forget or a failure to inhibit irrelevant thoughts and actions (Hasher AG04306; Hasher, Quig, & May, 1997). Research in this area is important for theoretical as well as practical reasons. These findings suggest that some forms of memory loss may not be a result of an inability to form new memories but rather may be a loss or slowing of cognitive strategy implementation (e.g., deleting and inhibiting old memories). The practical implications in these recent findings are that appropriate training may ameliorate this age-related effect (Hasher et al., 1997).

There are frustrating, and sometimes life-threatening, consequences when older adults receive wrong, or to-be-forgotten, information and then are unable to forget the information. For example, there are social consequences when older adults are unable to abandon no longer appropriate topics of conversation (Hasher et al., 1997). Explaining why older adults have difficulty recovering from irrelevant information has implications for intervening in these mutually frustrating situations. Moreover, assessing which cognitive control strategies continue to function effectively is central to designing practical intervention strategies.

Program Activities

BSR is proposing three relevant research initiatives; these include research in cognitive functioning among the oldest old, in higher-order cognitive functioning, and to develop standardized measuring instruments for cognitive aging.

Research Advances

Contrary to claims of a decreasing working memory capacity (e.g., Salthouse & Babcock, 1991), Hasher (AG04306) interprets her recent results to indicate that older adults do not have memory capacity limitations; but rather older adults may have a decreasing ability to delete old material from short-term memory. This inability to delete or inhibit information from the memory system clutters memory. To measure capacity, Hasher used the resource-demanding free-recall task in which older adults were first asked to recall from a long list rather than using the standard successively longer list protocol. Older adults and younger adults demonstrated equal capacity when these longer lists were given first. A decreased ability to delete previous words might explain age-related differences found in studies using successive lists.

Hasher's other recent results support the interpretation that older adults have difficulty inhibiting learned material and responses despite their irrelevance (Hasher AG04306). Several of those findings are briefly enumerated here. Two experiments support the conclusion that recently learned and irrelevant information persists in the memory of older adults. First, older adults were less able to forget recently acquired information that was to be forgotten or is no longer relevant. They were also more likely to use irrelevant information that had been presented indirectly in a later task. Several experiments found that actions can also be difficult to inhibit (Hasher AG04306). When trained to look away from a brief light, older adults made more errors than younger adults. Older adults had more difficulty than younger adults stopping the production of a no longer needed action, such as categorizing words. They also had difficulty

controlling well-learned or strong responses. For example, when hearing a sentence like "Before you go to bed, turn off the _____", older adults continue to respond with "lights" even when "lights" is irrelevant and "stove" is clear more relevant.

Hess' (AG05552) research in social cognition is also relevant to this memory in aging paradox. In a study examining adults' susceptibility to using biased extraneous information in making social judgments, Hess had previously shown that aging is associated with increasing susceptibility to bias in decision-making. His current research found that when older and younger adults are unaware of the potential influence of information, they make equivalent biased judgments; however, when awareness of the potential bias is high, older adults continue to demonstrate bias. This finding is consistent with a decreased ability to control or inhibit socially irrelevant information.

It is also relevant that there is an age-related decrease in the ability to switch languages (Bates AG13474). Older adults show an increase in semantic priming within and between languages. A Magnetic Resonance Imaging study implicates executive control processes: When switching languages, there is an increase in activation in the dorso-lateral prefrontal cortex, an area active when tasks require mental or cognitive control.

Switching tasks requires the inhibition of one task for another (Hoyer AG1145; Kramer AG14966). Despite age-related increases in costs while switching tasks, Kramer (AG 14966) reports that with a small amount of practice, older adults show switching costs equivalent to young adults. This reduction in costs is maintained over a two-month retention period. The strength of this result has implications for effective intervention strategies and supports the conclusion that executive memory processes can continue to adjust effectively, despite apparent decline or slowing. Hertzog's (AG131148) findings also indicate that some key learning skills indicative of executive memory processes remain intact and effective among older adults.

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Future Directions

Clearly, there are conflicting results and conclusions regarding memory and aging (e. g., Schooler, Neuman, Caplan, & Roberts, 1997). However, Hasher's experimental results, among others, are consistent with the reality that some older adults have difficulty recalling recently acquired information while those same adults are unable to forget inappropriate or wrong information. Hasher explains her systematic results in terms of decreased inhibition, but she does so with controversy (e. g., Schooler et al, 1997). However, Kramer's (AG08435; Kramer, Humphrey, Larish, Logan, & Strayer, 1994) results are suggestive of specific domains of

inhibition rather than general inhibition and they are also suggestive of multiple inhibitory mechanisms.

Moreover, these combined results, among others, strongly implicate the need for an integrated theoretical approach to test competing research results and research models. With an integrated approach the numerous sound research findings in this research domain will better enlighten us to the processes of memory decline in aging. Furthermore, research results confirming the continued efficacy of executive processes (Hertzog AG131148) as well as the positive training studies such as those conducted by Kramer (AG14966) are hopeful, suggesting that these age-related inhibitory deficits are amenable to appropriate interventions.

List of Funded Grants

AG13474, Elizabeth Bates, Bilingualism in Aging
AG07654, Arthur Fisk, Automatic and Controlled Processing in Aging
AG04306, Lynn Hasher, Age, Inhibition, and the Contents of Working Memory
AG131148, Christopher Hertzog, Aging, Metamemory, and Strategy Use during Learning
AG05552, Thomas Hess, Social Cognition and Aging
AG11451, William Hoyer, Aging of Visual/Cognitive Mechanisms
AG12203, Arthur Kramer, Cognitive Plasticity and Aging: Dual Task Training Effects
AG09755, Donald MacKay, The Origination of Cognitive Processes in Older Adults
AG13973, Cathy McEvoy, Prior Knowledge Effects in Cognitive Aging
AG08055, K. Warner Schaie, Longitudinal Studies of Adult Cognitive Development
AG10569, Elizabeth Zelinski, Longitudinal Assessment of Cognition in Adults

PSYCHOLOGICAL STRENGTH AND VULNERABILITY IN ADULTHOOD AND LATE LIFE

Prepared by Merry Ward

Significance of Program Activity

Research in aging has confirmed the life-long relationships of psychological processes (e.g., personality, behavior, and life events) to mental and physical health outcomes. Specific causal models for psychological strength and vulnerability are being developed that will increase our understanding of how psychological processes are related to physiological processes and health outcomes. These causal models have implications for intervention.

Current research indicates the role of childhood and adult psychological trauma in weakening a person's ability to respond to later trauma (Aldwin AG13006, Krause AG09221). Findings also indicate possible protective factors. Medical professionals, family members, and other caregivers might use life-history knowledge to anticipate an individual's susceptibility to specific difficulties and intervene accordingly. Additionally, public health policy and educational programs designed to reduce increased mortality risks among the economically disadvantaged have focused on reducing risky health behaviors such as smoking, alcohol use, sedentary lifestyle, and body weight (House AG05561; Lantz, House, Lepkowski, Williams, Mero, & Chen, 1998). More recent research indicates that these risky behaviors account for a relatively small portion of increased mortality risk (House AG05561; Lantz et al., 1998).

Program Activities

A workshop focusing on research opportunities in personality is planned for February 1999. Meetings were held in May and August 1998 to initiate a workshop focusing on research opportunities in interpersonal relationships.

Research Advances

One of the long-term effects of psychological trauma is an increased vulnerability to the adverse effects of later trauma (Aldwin AG13006, Krause AG09221). Aldwin (AG13006) found the physical health trajectories of older men who had experienced either combat or a non-combat related trauma did not differ from the trajectories of men who had experienced neither. However, those who had experienced more than one trauma developed physical symptoms at a faster rate over time. Similarly, while there is a general increase in mortality risk for adults who experienced parental divorce during childhood, it is the combination of early parental loss and recent stress that predicts current increased mortality risk (Krause AG09221). With regard to late-life trauma, elder mistreatment confers an additional death risk beyond those risks associated with injury, demographic factors, chronic disease, and depression (Lachs AG02015; Lachs, Williams, O'Brien, Pillemer, & Charlson, 1998).

Perhaps as important are the findings that some individuals are able to overcome traumatic events and difficult circumstances without any apparent increase in vulnerability. Ryff (AG13613) examined the lives of women who had a single episode of depression and later displayed high psychological well being. These psychologically resilient women had experienced adversity, or multiple adversities, at different phases of their lives yet they had had protective factors such as socioeconomic advantage, coping strength, or social ties. Friedman (AG08825) examined adults who demonstrated psychological health and well being despite early parental divorce. In addition to strong marriages, those males who described their spouses as happy and easy to get along with were at a lower mortality risk among others who also had

experienced early parental divorce. Similarly, Labouvie-Vief (AG09203) found that early positive family climate predicts high life satisfaction, well being, and higher coping-style scores, and it predicts a positive view of current family life. However, she also found that the effects of concurrent relationships are better predictors of adult well being than the effects of early relationships. Thus, positive social ties during adulthood, including happy marriage, and socioeconomic advantage may strengthen psychological immunity, or may only reflect psychological immunity.

Another area of research has consistently demonstrated that hostile personality, in addition to characteristics such as impulsiveness, predicts increased health and mortality risk (e.g., Friedman, Tucker, & Reise, 1995). More recent findings show that psychosocial correlates of hostility (e.g., trust, suspiciousness, and negative beliefs about others) also predict mortality risk (Aldwin AG13006, Barefoot AG09276, and Friedman AG13006). For example, Barefoot (AG09276) found that persons with high levels of trust have less than half the risk of dying than persons with high levels of mistrust. Barefoot (AG09276) also identified these components of hostility: tendencies to have negative beliefs about others, tendencies to openly express antagonism, and tendencies to show resentment and suspiciousness. In addition, Aldwin (AG13006) found that a suspicious and anxious personality predicts higher mortality risk. Finally, Friedman (AG08825) found that the way individuals explain negative events predicts mortality risk: Those individuals who attribute negative events to internal, stable, and enduring causes have an increased mortality risk.

Hostility also predicts health-related behavior and concurrent physical health status. Using data from a longitudinal study of women, Siegler (AG12458) found that high levels of hostility, neuroticism, depression, impulsiveness, and vulnerability predict a lack of awareness of changes in health recommendations. Hostile personality predicts a higher increase in blood pressure when a person is angered and it also predicts that the blood pressure level will remain elevated longer (Barefoot AG09276). In a separate study which examined blood pressure level's relationship to function, higher average blood pressure levels were found to predict accelerated decline in cognitive function, specifically speed of performance and visualization performance (Elias AG03055).

A sense of control, which is the perception of directing and regulating one's own life, and educational attainment are generally known to be related to good health and mortality. Mirowsky (AG12393) found that the level of educational attainment during youth is a strong predictor of an enduring sense of control. House (AG05561), whose research focuses on mortality factors among the poor, found that health behaviors per se (i.e., smoking, alcohol use, sedentary lifestyle, and body weight) do not account for the increased mortality associated with lower SES; however, educational attainment and income does. Moreover, when statistically controlling for education, educational attainment's link to mortality is found to be an effect of education's link to income.

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Future Directions

Sources of long-term psychological vulnerability include trauma and other life circumstances as well as personality factors. To better understand immunity to psychological trauma, researchers should use causal modeling with longitudinal data collected from the life course of individuals who display resiliency to difficulty and, likewise, examine the lives of those who are vulnerable. These causal models should include interpersonal relationship histories, sources of advantage, personality characteristics, and physiological data. Current research in the areas of hostile personality and socioeconomic status appear to be converging on similar processes – trust and suspiciousness, sense of control, interpersonal history, enduring negative beliefs about others, and response to anger. Researchers in these domains should consider the implications of these related research findings for their own research. They should also consider the implications of trauma and its role in manifesting these characteristics, as well as consider how these characteristics predict the occurrence of trauma.

List of Funded Grants

AG13006, Carolyn Aldwin, Mental and Physical Health Trajectories in Adulthood
AG13490, Toni Antonucci, Convoys of Support in Old Age: A Cross National Study
AG09276, John Barefoot, Gender and Age Differences in Hostility
AG03055, Merrill Elias, Age, Hypertension, and Intellective Performance
AG00646, Penelope Elias, Age, Hypertension, and Cognitive Functioning
AG08825, Howard Friedman, Predictors of Health & Longevity
AG05561, James House, Productivity, Stress, and Health in Middle and Later Life
AG07823, Eva Kahana, Adaptation to Frailty Among the Old-Old
AG09221, Neil Krause, Well-Being Among the Aged – Personal Control and Self-Esteem
AG09203, Gisela Labouvie-Vief, Cognitive and Emotional Maturity in Adulthood and Aging
AG02015, Mark Lachs, Predictors of Elder Mistreatment
AG154124, Jersey Liang, Health and Well-Being Among Older-Old in U.S. and Japan
AG12731, Nadine Marks, Socioeconomic Inequalities, Gender, and Midlife Health
AG12393, John Mirowsky, Aging, Status, and Sense of Control
AG13613, Carol Ryff, Life Histories and Mental Health in Midlife
AG12458, Ilene Siegler, Models of Personality, Health and Disease in Adulthood
AG13968, Bert Uchino, Social Relations, Aging, and Cardiovascular Changes
AG13662, Keith Whitfield, Health and Psycho-social Factors in Older Black Twins
AG14203, Elizabeth Zelinski, Disease, Aging, and Cognition

Health, Work and Retirement

Prepared by Richard Suzman and Georgeanne Patmios[1]

Significance of Program Activity

This program area focuses on the complex interactions between demographic trends, the public and private policies that affect people as they age, and the diversity of individual health and economic circumstances at older ages. Societies around the world are considering the implications of having an older population, and how their traditional policies and institutions may need to change. For example, the programs that have traditionally provided benefits to older people (such as Social Security and Medicare) cost more than they used to cost, and projected future costs are even higher, reflecting the large and growing pressures for cost-saving policy reform. But cost-saving reform generally translates to fewer benefits for at least some people. As a consequence of both policy changes and other trends, there are parts of the population whose circumstances may be getting worse, and other parts of the population that are largely unaffected. Even measuring the implications of policy reform is complicated by the interactions between policies and individual behavior, such as when to retire, or how much to save, or where to live. If Social Security benefits are reduced, for example, some people may choose to save more and retire later, so that their overall economic status will seem largely unaffected. An important characteristic of the aging population that should be recognized is its immense diversity.

Changes for the "typical" person do not address the immense diversity of the population -- as represented by differences in income and wealth, differences in benefit eligibility (such as whether their employer offers a pension plan), differences in family composition and support, and differences in health and functional ability. This program area aims to improve our understanding of these very complex interactions for people in widely varying circumstances.

Program Activities

DPE continues to support a variety of database development and research activities on the implications of population aging, on the health and economic well being of individuals as they age, and on the programs and policies that support older persons. The Health and Retirement Study (HRS) and the Study of Asset and Health Dynamics Among the Oldest Old (AHEAD) are increasingly recognized as among the most valuable sources of information about health and economic circumstances at older ages, and how they relate to public and private programs and policies. DPE also supports nine centers for research on the demography and economics of aging, several program projects, and a whole series of independent research grants in this area.

Research Advances

Three themes have been central to our research over the past year. The first is the substantial influence of policy on what people do. Retirement income policies, health care policies, and special saving programs have a strong influence on the economic and health-related decisions that people make as they age. Second, there are large differences in individual circumstances and individual well being, and one learns a lot more from studying this variation than from analyses that are restricted to the "average" or "typical" or "median" person. And third, the world really is changing -- as people are living longer, as people are living healthier, and as 401(k) plans have

1 With the substantial assistance of Dr. Richard Woodbury, Maine Center for Policy Research. Also of Kathleen Nebeker, University of North Carolina Chapel Hill (BSR Summer Intern, 1998).

induced savings across large segments of the population that have traditionally done very little retirement saving.

Financial Preparation for Retirement

Resulting in part from the rich new data resources in the Health and Retirement Study (HRS), we have learned a lot over the past year about the economic circumstances of individuals approaching retirement. For example, research by Moore and Mitchell (P20 AG12836) has calculated the total wealth of individuals in the HRS in 1992, most of whom are between ages 51 and 61. The median ten percent of this population has about $60,000 invested in their home, about $67,000 in financial assets, about $65,000 in an employer pension (based on a discounted value of future benefits), and about $134,000 in Social Security (also based on a discounted value of future benefits). Mitchell estimates that the average household would need to save about 8 percent more of their income than they are currently saving, up until the age of 65 (or about 17 percent more until age 62) in order to maintain their standard of living in retirement. Those with lower earnings generally need to increase their saving by less than this amount, because of the higher Social Security replacement rates at lower income levels. Those with lower wealth, however, may need to increase their saving more than these amounts. Overall, household saving rates are too low relative to what most households will need in retirement.

Analyses of the financial preparation of households for retirement show significant variation across the population. For example, Gustman, Mitchell, Samwick and Steinmeier (R03 AG15224, R03 AG14574), using the HRS and the companion Pension Provider Survey (PPS), have found it useful to differentiate between three groups of households. The highest income households have very large quantities of financial assets and do not depend on Social Security or private pensions for their retirement income. Middle and upper income households rely to a very large extent on private pensions, while lower income households depend most heavily on Social Security. Health status is also an important determinant of financial preparedness for retirement, with households in poor health having assets worth only a fraction of the assets held by those in good health. (This relationship between health and economic status is discussed further below.)

Two sets of studies emphasize another source of difference across households, relating more to the decision of whether or not to save, and its implications for wealth accumulation. Lusardi (R01 AG13893) finds that one-third of households in the HRS have not thought much about retirement yet, and this lack of foresight is an important determinant of their more limited wealth accumulation. Venti and Wise (P01 AG05842) find that a very large portion of the variation in wealth across households results not from earnings differences, but from decisions about whether or not to save. They do this by dividing the population into lifetime earnings deciles, and then evaluating the variation in savings and asset accumulations within earnings deciles. What they find is that people with about the same lifetime earnings have huge variations in how much wealth they have accumulated.

Poterba, Venti and Wise (P01 AG05842) have also conducted a long series of studies on IRA and 401(k) plans and their effectiveness in increasing household saving. Their most recent results suggest that the asset accumulations in these retirement accounts will be increasingly important components of retirement support in the future. In the mid-1990s, for example, at least one spouse in over 50 percent of families was eligible for a 401(k) plan and about 70 percent of those eligible contributed. Annual contributions to 401(k) plans now exceed $100 billion. Projecting the effect of current contribution trends on future asset accumulations in 401(k) plans, Poterba, Venti and Wise predict dramatic increases in the financial assets of retiring households

in the future. Among those reaching age 65 in 2025, for example, the average level of 401(k) assets is likely to exceed the discounted value of Social Security benefits. Thus their 401(k) plans could contribute more to their retirement support than Social Security. While these large financial asset accumulations are unlikely to be realized by families with the lowest lifetime earnings, 401(k) assets are projected to become a substantial fraction of Social Security wealth for families with lifetime earnings above the two or three lowest deciles. In addition to economic diversity among families, there is also economic variation between cohorts, as evidenced in the study discussed next

Public Policy, Health and the Labor Market

Due to projected shortfalls in the Social Security trust fund in the future, Social Security reform has been a leading public policy concern in recent years. Changes in Medicare eligibility have also been proposed. And many employers have revised (or even discontinued) their retiree health and pension programs. One question that is raised frequently in response to such policy reforms is how they affect work and retirement decisions. Of course, retirement decisions depend at the same time on health status. A number of studies supported over the past year address the inter-relationships between public policy, declining health, and labor market behavior.

Madrian (R29 AG13020), using the SIPP and CPS, has looked most extensively at health insurance and the labor market. Some of her earlier NIA-supported work focused on retirement, and the effect of health insurance availability in inducing earlier retirement. The availability of employer-provided health insurance before age 65, or the enactment of continuation coverage mandates, or the availability of Medicare at age 65 -- all are found to have an effect in increasing retirement among those who become eligible for coverage.

Over the past year, Madrian has extended her work in several areas. First, she has explored the relationship between health insurance and unemployment, showing how insurance coverage drops following job separations, how lower insurance costs induce more unemployed persons to seek coverage, and how the availability of health insurance increases the number of individuals with spells of non-employment, and the duration of time spent without a job. Second, she has shown how employers may increase work hours (in place of hiring more workers) in response to rising health insurance costs. And third, she has considered the relationship between health insurance and self-employment, showing how individuals with better access to health insurance (such as through a spouse's employment) are more likely to become self-employed.

Gruber and Wise (P20 AG12810) have been directing a project on the incentives of public retirement income programs in eleven industrialized countries. While there has been a trend toward earlier retirement in all of the countries, there remains significant variation in the labor force participation rates of older people. What this set of studies suggests is that the different retirement policies have different work and retirement incentives, and these incentives explain a lot of the difference across countries in how much people work at older ages. Gruber and Wise develop an aggregate measure of the "tax force to retire" in different countries. The countries with the highest "tax force to retire," such as Italy and Belgium, have among the lowest labor force participation rates between ages 55 and 65. At the opposite extreme, Japan has the lowest "tax force to retire" and the highest labor force participation rates between ages 55 and 65. Smeeding and Quinn (P01 AG09743) have also looked at the wide variation in labor force withdrawal across countries. They also find that most men leave the workforce before the

normal retirement age (some much earlier), though the specific patterns of work and retirement behavior differ across countries.

Bound, Schoenbaum, and Waidmann (R03 AG14547) have studied the role of health limitations in labor market decisions at older ages. Among non-working individuals between ages 51 and 61 (from the HRS), they find large differences between those who report health limitations and those who report good health. Those with health limitations tend to be less well educated, have lower incomes, and are more likely to be from minority populations. A much higher share of their income comes from Social Security Disability Insurance (DI) and Supplemental Security Income (SSI), and a much smaller share from private pensions or assets. Thus those who stop working for health reasons have very different characteristics from those who stop working for other reasons.

McClellan (R03 AG14809) has also explored the relationship between health limitations and retirement, focusing on the onset of an adverse health event. Like Bound, Schoenbaum and Waidmann, he finds that health events are more common among individuals with lower education, income and wealth. He also shows how the onset of an adverse health event can have a significant effect in inducing retirement. The onset of a major health event, such as a heart attack or stroke, for example, has the largest effect on retirement, particularly when accompanied by a decline in functional status. Men with a major health event and an associated functional status decline are more than 75 percentage points more likely to stop working. The onset of a chronic illness, such as diabetes or arthritis, has a more modest effect on labor force departure.

In a series of historical analyses of retirement trends, Costa (Fogel P01 AG10120) finds that the high labor force participation rates of older men prevailing at the turn of the century arose because retirement incomes were too low to support them adequately and that as retirement incomes have risen, so have retirement rates. But increased income is not the sole explanation. She finds that the short-term income elasticity of retirement has fallen over time, because workers are no longer close to subsistence levels, because of social norms that induce retirement at the "official" ages established by Social Security, or because retirement has become more attractive now that individuals are less circumscribed in their choice of leisure time activities. She presents evidence which indicates that the rise of retirement cannot be attributed to worsening average health, declines in part-time work, non-farm self-employment, and farming.

Burkhauser, Smeeding and Sullivan (P01 AG09743) have explored differences in economic well-being across cohorts of the population in Canada, Sweden, the United Kingdom, and the United States over the 1974 to 1994 period, comparing relative incomes, poverty status and social expenditures. They find large positive changes in the well-being of the aged and negative changes in the well-being of youth. Related work by Burkhauser suggests that in most modern nations, there is heavy dependence on social retirement systems to avoid poverty, maintain average income, and reduce inequality among the aged.

The Relationship between Economic Status and Health

There is a well-documented positive relationship between socioeconomic status (as measured by income, wealth, education, job prestige, or related factors), health status, and longevity. A number of studies have been conducted over the past year to learn more about this relationship.

Smith (R37 AG12394) has explored this relationship in some detail in the HRS. Using data from wave 1 (1992-1993) and wave 3 (1996-1997), Smith finds that the median wealth of individuals

who report "excellent" health in both waves is $232,000, compared with $178,000 among those who report "very good" health in both waves, $109,000 among those who report "good" health, $57,000 among those who report "fair" health, and $24,000 among those who report "poor" health. Increases in wealth between waves are higher among those whose health also improved, as compared with those whose wealth declined. Smith suggests that the direct influence of SES and health may therefore be strongest during childhood and early adulthood when levels and trajectories of health stocks become established and then reverse after age 50 when health largely affects SES. Indeed, HRS data show that adverse health events appear to have a significant impact in reducing wealth, not so much because of higher out-of-pocket medical costs, but for other reasons, such as losses of earnings. Smith therefore suggests that health and disability insurance is really "wealth" insurance for the older population.

Lillard (Hurd, P20 12815) used the old Retirement History Survey to look at how adverse events influence the spending and savings patterns of retired couples. Lillard found that two factors have an especially significant effect on an elderly couple's financial situation and on their spending and planning decisions: the illness of one of the partners and the types of benefits available to the partner who survives the other's death, such as life insurance and annuity incomes from Social Security and private pensions.

The Costs and Benefits of Medical Spending

As much as there are concerns about medical expenditure growth, these increasing costs are also buying a different, and probably better, array of medical care services. People are living longer and healthier lives, and at least some of the improvements in health and longevity should be attributed to changes in medical care. A number of studies completed over the past year have addressed the complex interactions among prices of medical services, overall medical care spending, medical technology, and outcomes.

Garber, MaCurdy and McClellan (P01 AG05842) have conducted a series of studies on the growth of Medicare expenditures and, more specifically, the composition of Medicare expenditure growth. Between 1987 and 1995, for example, about the same proportion of Medicare beneficiaries used hospital services (covered under Medicare Part A), but average expenditures for those services rose significantly. By contrast, the proportion of beneficiaries using physician services (covered under Medicare Part B) increased during this period, but average expenditures per beneficiary remained more stable. These investigators also find that a large portion of Medicare expenditure growth can be attributed to the highest cost users. Indeed the two percent of Medicare beneficiaries with the highest expenditures accounted for 27 percent of all Medicare expenditures in 1995, and about one-third of Medicare expenditure growth between 1987 and 1995. All of these observations point to an increase in expensive (technologically intensive) medical services as a key source of medical expenditure growth.

The importance of technology to the treatment of individual health conditions was explored by Cutler (R29 AG11223) and McClellan (R29 AG11706). To date, their work has focused on the increase in medical care spending for heart attack treatment. Based on this case study, they find that essentially all of the expenditure growth between 1984 and 1991 was associated with more frequent use of intensive cardiac technologies, such as catheterization, bypass surgery and angioplasty. Indeed the prices paid for any given treatment generally declined over this period, while the number of patients treated intensively increased from 10 percent to almost 50 percent. Between 1984 and 1994, life expectancy following a heart attack increased from five years to six years. So it is likely that the new technology was not just more expensive, but also better. Sloan

(R01 AG09468) has reached similar conclusions about the treatment of hip fracture and stroke. Between 1984 and 1994, real expenditures for hip fracture increased by 103 percent, and real expenditures for stoke increased by 51 percent. But improvements in Instrumental Activities of Daily Living (IADLs) were found in the period following treatment, and preliminary evidence was found that survival rates increased. In related work, Sloan found that the higher cost of care in a major teaching hospital is associated with improved survival among patients treated in a teaching hospital. So spending more money is not necessarily wrong; it just depends what the additional spending buys.

Cutler and Richardson (P20 AG12810) have extended this line of research to consider overall increases in medical spending, and overall improvements in health and longevity. They estimate the value of health improvements between 1970 and 1990 to be over $100,000 per person. While not all of these health improvements can be attributed to improvements in medical care, this approach to analyzing medical care can provide a more balanced view of what we get from medical care, and not just what we spend.

Kessler and McClellan (R03 AG14833) have identified "defensive medicine" as one area of health care that may represent unnecessary expense. Their work shows that reductions in both the financial and the non-financial dimensions of malpractice pressure cause significant reductions in medical expenditures for cardiac illness, decreasing both therapeutic and diagnostic treatments, but with no substantial effects on mortality or on important complications of cardiac illness.

Although Medicare covers most of the elderly, they potentially face large out-of pocket costs for their health care due to excluded services. One of the most significant exclusions is for prescription drugs. Recent health care reform initiatives proposed adding prescription drug coverage to the Medicare program. Lillard (R01 AG12420), using the RAND Elderly Health Supplement to the Panel Study of Income Dynamics to study the behavioral response to health policy initiatives, finds that adding prescription drug coverage to the Medicare program increases both the probability of use and total expenditures conditional on use.

Intergenerational Support within Families

Intergenerational support within families, ranging from financial assistance to caregiving to joint living arrangements, is a potentially important resource that can contribute to the well being of individuals as they age. Wachter (R01 AG09781) has studied two counter-balancing trends in the potential for support within families. On the one hand, those reaching older ages today have fewer children than those who reached older ages in earlier generations. Declining fertility has left fewer biological kin. On the other hand, increasing rates of divorce, remarriage, and family blending have expanded the numbers and varieties of step-kin and other non-standard kinship ties. Indeed Wachter speculates that kinship networks extended through half- and step-links, by stretching across racial and economic lines, may promote social cohesion.

Lillard (R37 AG08346) and Willis have looked into transfers of time and money in Malaysian households to gain insight into how and why family members of different generations help each other out. The evidence indicates that in general, such help is based on altruism, and that families vary considerably in the way they arrange transfers of money and time. They find evidence supporting the hypotheses that children are an important source of old age security, and that old age security is, in part, children's repayment for parental investments in their education. This repayment is a function of the children's income, and in the case of females, a function of

their spouse's income. They also find evidence supporting the hypothesis that parents and children engage in the exchange of time and help for money.

Wong (K01 AG00647) has looked at intergenerational support within immigrant families. She finds higher levels of intergenerational support among those born in other countries, with shorter tenure in the United States, and with less acculturation into mainstream society (as measured by language skills). As their time in the United States increases and acculturation occurs, transfer behavior within the family seems to move in the direction of reducing assistance, and particularly assistance for parents.

Future Directions:

As more waves of the HRS and AHEAD become available, we will be able to pursue in depth all of the areas raised in this report. We will have followed more persons through the transition from work to retirement, through changes in health and functional status and, to some extent, through death. Each wave of the new data adds to the longitudinal value of this data resource. As the data are linked to SSA earnings and benefit histories and with HCFA Medicare data (see HRS/AHEAD progress report), we will have far more detail than we could collect in the interviews alone.

As part of our confidentiality initiative, we are assessing the benefits of using linked data and the difficulties involved with following appropriate confidentiality and privacy procedures. The University of Michigan will hold a small workshop on this that will precede an NAS CNSTAT/CPOP workshop to discuss these issues and to identify a series of best practices. We expect some applicants to propose this as a focus in the P20 recompetition (as Research and Development P30s). We are also holding an NAS CPOP workshop to consider the value of adding biological indicators to surveys such as HRS and AHEAD.

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K01 AG00647, Rebecca Wong, Economics of Intergenerational Transfers -- US Hispanics
K01 AG13893, Annamarie Lusardi, Saving & Wealth near Retirement
P01 AG05842, David Wise, Economics of Aging
P01 AG08291, Lee Lillard, Social and Economic Functioning in Older Populations
P01 AG09743, Richard Burkhauser, Well Being of the Elderly in a Comparative Context
P01 AG10120, Robert Fogel, Early Indicators of Later Work Levels, Disease and Death
P20 AG12810, David Wise, NBER Center for Aging and Health Research
R01 AG09468, Frank Sloan, Public Subsidies Effects on Use of Long-term Care
R01 AG11874, David Wise, Firm Health Insurance Plans
R01 AG12420, Lee Lillard, Elderly Health and Health Care Utilization
R01 AG12921, Michael Hurd, Using Subjective Information to Explain Saving Decisions
R01 AG09781, Kenneth Wachter, Projecting Kinship Resources for the Elderly
R03 AG14547, John Bound, Measuring the Effects of Health on Retirement Behavior
R03 AG14574, Andrew Samwick, Pensions & Social Security Effect on Retirement & Saving
R03 AG14809, Mark McClellan, Economic Consequences of Health Events
R03 AG15224, Alan Gustman, Missing Data/Quality in HRS Pension/Social Security Data
R29 AG11223, David Cutler, Public Policy for an Aging Society
R29 AG11706, Mark McClellan, Health Technologies -- Costs and Outcomes in the Elderly
R29 AG11895, Jonathan Gruber, Health Insurance Reform, Older Workers, and Retirement
R29 AG12658, Dora Costa, Health of Young Adults -- Evidence Causes and Outcomes
R29 AG13020, Brigitte Madrian, Health Insurance and the Labor Market
R37 AG08146, David Wise, Pension Plan Provisions and Early Retirement Extension
R37 AG08346, Lee Lillard, Intergenerational Transfers in Malaysia
R37 AG12394, James Smith, Wealth Disparities Among Mature and Older Adults
R03 AG15166, Stephen Crystal, Out of Pocket Health Care Costs of the Elderly

Health and Longevity

Prepared by Kathleen Nebeker[2], Richard Suzman and Georgeanne Patmios[3]

Significance

The needs of an older population relate importantly to the health, functional ability, and longevity of individuals as they age. Program research is considering issues in each of these areas. For example, how long are people likely to live in the future? A number of studies suggest that life expectancy will continue to increase, and that the population of older persons could be substantially larger than most current projections. A fundamental issue is whether decreases in mortality at older ages have been accompanied by changes in health and functional status. Findings from the NLTCS indicate that rates of chronic disability and institutionalization among older people in the U.S. are falling dramatically. A smaller proportion of older people is disabled, and disabilities among those having functional problems are less severe. What are the possible explanations for this observed trend? Does it reflect true changes in underlying physiological capability, or is it a reflection of changes in population composition, changes in individuals' expectations about their ability to function independently, or of environmental modifications? A clear understanding of the trend offers insight into future planning for the nature, distribution, and financing of health and caregiving services and directly bears upon the long-term solvency of the Medicare Trust Fund. If past improvements in functioning are indeed the result of changes in underlying physiological capability, then we need to learn more about the specific interventions and behavioral changes that most likely underlie these trends. In addition to investigating trends, program research deals with the complex inter-relationships between socioeconomic and demographic characteristics, health-related behaviors, chronic illness, functional ability and longevity.

Program activities

DPE/BSR grants support both data collection and research on longevity, health and disability. The 1997 *PNAS* results have resulted in increased interest in understanding the disability decline. New data on death and causes of death over very long periods are being developed for both the United States and other countries, and work on non-human species is accelerating. The HRS and AHEAD surveys are providing new types of information on the interplay between socioeconomic characteristics and health and longevity.

Research advances

Trends in Health and Disability

The Manton et al. (R37 AG07198) finding of a 14.5% decline in chronic disability in older persons (*PNAS*, 1997) between 1982-1994 (with a 1.5% per annum decline between 1989 and 1994) is one of the most important research results. During the past year, Manton developed projections to 2070. Unlike the projections of SSA and the Medicare Trustees, his incorporate population health trends. Manton finds that by 2070, "risk factor adjusted life expectancy" could be 98+ years, far exceeding current SSA or HCFA projections. He calculates the relationship of risk factors to chronic morbidity, disability and mortality, and the range of potential effects of early interventions on risk factors, based on multivariate analyses of data from the Framingham Heart Study. He further projects that in 2070, should the trends continue, the elderly will spend only 3 years in chronically disabled states, vs. 6 years in 1994, and that there will be 20 million fewer chronically disabled older persons in 2070 than would be the case assuming no disability

2 University of North Carolina Chapel Hill (BSR Summer Intern, 1998).

3 With the assistance of Dr. Richard Woodbury, Maine Center for Policy Research.

decline. Since health costs are a function of both the duration and intensity of medical problems, this suggests that the projected declines in chronic disability could have a large effect on future health costs. Manton asserts that large- scale adoption of preventive strategies, broad dissemination of the best and new medical technologies, and significant new investment in biomedical research is required, in order to achieve declines of this magnitude. (PNAS, 1998; Science, 1999.)

In the first explicit attempt to replicate Manton et al.'s 1997 PNAS results, Freedman and Martin (NIA supplement to P50 HD12639) used the 1984, 1990, 1991 and 1993 Survey of Income and Program Participation (SIPP). In these rounds, a module on health and disability was administered. After controlling for changes in the socioeconomic and demographic composition of the population, they find that large declines, ranging from 0.9% to 2.3%, in the prevalence of 4 functional limitations – difficulty in seeing, lifting and carrying, climbing, and walking - occurred among older Americans from 1984 to 1993. The extent of improvement varied with age, with smallest absolute gains for those aged 50 to 64 and largest gains for those 80 and older. Freedman and Martin also find that, in most cases, the substantial shifts in the composition of the population -- such as the population aging, shifts in marital-status composition, increases in minority populations, and increase in educational attainment – explain only a small portion of the trends. In addition, for the measure of difficulty in walking, changes in assistive device use were also factored out. Freedman and Martin's composition adjusted estimates are as large or larger than Manton's finding of a decline of 1.1% between 1982 and 1989 (PNAS, 1997). Thus, these findings lend support to the position that changes in physiological capability underlie the trend toward declining disability. There are also preliminary reports that the Medicare Current Beneficiary Survey also shows declining disability. These findings remove a survey artifact or data error as an explanation for the observed decline.

Crimmins (R01 AG11235) uses the 1982 to 1993 National Health Interview Survey (NHIS) to look at cohort patterns in disability and disease presence for adults between 1915 and 1959 (ages 30 to 69 years). She finds that in general, disability decreases for cohorts born between 1916 and the early 1940s (for men) or the early 1950s (for women), but begins to increase for cohorts born after those dates. Later-born cohorts are found to have significantly lower levels of some diseases, most importantly cardiovascular disease, arthritis, and emphysema. However, some diseases and conditions are more prevalent in these cohorts, asthma, musculoskeletal disorders, and orthopedic impairments. Crimmins suggests that adults born in the late 1940s and 1950s will be in better cardiovascular health but may be in worse musculoskeletal condition when they enter old age compared with current cohorts of older persons. In separate NHIS analyses of trends in self-reported ability to work, presence of disease and causes of actual work limitation, Crimmins finds that men and women currently in their 60s report significant improvement in their ability to work. She finds that the percent unable to work at age 67 in 1993 is lower than the percent unable to work at age 65 in 1982. This improvement appears to have been similar for racial and ethnic groups and across educational subgroups, although African Americans and those with lower educational attainment are less healthy to begin with. She finds that the improvement in health is due to the changing educational composition of the population, to better health behaviors, and to the decline in the prevalence of cerebro/cardiovascular diseases and arthritis.

Mortality trends

Vaupel and colleagues (P01 AG08761) document the downward trend in mortality among female octogenarians since 1950 in Japan, Sweden, England and Wales, Iceland and the U.S.

(U.S. total and U.S. whites). Since 1990, U.S. mortality improvements have been slow compared to other countries. In a previous NEJM article, Manton (R01 AG01159) and Vaupel (P01 AG08761) compared life expectancy for males and females in Sweden, France, England and Japan and found that in 1987, U.S. life expectancy at age 80 and survival from the ages of 80 to 100 significantly exceeded life expectancy in these other developed countries. A major collaborative project by Wilmoth (R01 AG11552) and Horiuchi (K01 AG00554) analyzing Swedish and Japanese historical mortality patterns shows that historical mortality patterns are consistent with the theory that the deceleration is caused by heterogeneity in the risk of death. While their results are not conclusive, they have developed a general framework for approaching this issue, arguing that mortality data alone are insufficient for distinguishing fully between the competing hypotheses of heterogeneity and individual risk. Manton (R37 AG01159) uses extinct cohort techniques to examine cohort, race (black vs. white) and gender differences in mortality at very extreme ages, and finds that, consistent with research on other species examined in controlled experiments (see Vaupel, et al. 1998), cohort mortality rates in human populations show a tendency to increase very slowly past age 90. Manton, Wilmoth and Horiuchi suggest that the cause of this pattern is selection, meaning the gradual elimination of persons in high-risk categories from the population.

Many have accepted an estimate of 100,000 excess deaths to AD annually in the US. Using a demographic model and several population-based data sets (including the East Boston data), Ewbank (K01 AG00588) produced two independent estimates of the number of deaths attributable to AD in 1995 (*AJPH*, 1999). Both are 60-70% higher than the widely accepted estimates and show that AD ties cerebrovascular disease as the third leading cause of death. In addition, the rapid increase in the size of the population over age 85 has led to a substantial increase between 1990 and 1995 in the number of deaths attributable to AD.

Determinants of health & mortality: Genetic factors

The observed decline in mortality for females long past their reproductive ages, described above, has inspired Vaupel to attempt to replicate this in non-human species and to analyze the genetic determinants of longevity (*Science*, 1998). He estimated age trajectories of death rates for six non-human species for which large cohorts could be followed to extinction. In general, mortality rates decelerate and even decline at older ages in the species studied, including automobiles; and, for humans, insects and worms, the deceleration occurs at ages well past normal reproductive ages. Vaupel concludes that mortality deceleration may be a fundamental property not of life, but of complicated systems. He has also studied "survival attributes" that determine how long people will live and the extent to which these survival attributes are obtained from genetic factors, from factors occurring early in life, and from factors occurring later in life. He suggests that about a quarter of the variation in human life spans after age 30 may be attributed to genetic variation among people, that another quarter may be due to variation in survival attributes that are fixed by age 30 (such as health and nutrition in early life, educational achievement, etc.), and that subsequent events and current conditions account for the final half.

Evolutionary and life history theory, in general, and the evolutionary biology of aging, in particular, has been based on the assumption that demographic schedules of fertility and mortality are fixed. Recent work by Carey published in *Science*, (R03 AG14228, P01 AG08761) on the Medfly indicates that mortality schedules can be induced by diet. The life history of medflies is characterized by two physiological modes with different demographic schedules of fertility and survival: a waiting mode in which both mortality and reproduction are low and a reproductive mode in which mortality is very low at the onset of egg laying but

accelerates as eggs are laid. Medflies stay in waiting mode when they are fed only sugar. When fed protein, medflies switch to reproductive mode. Medflies that switch from waiting to reproductive mode survive longer than medflies kept in either mode exclusively. An understanding of the physiological shift that occurs between the waiting and reproductive modes may yield information about the fundamental processes that determine longevity. These results raise the possibility that biological clocks can be reset and that mortality schedules can be changed.

The identification of genes contributing to human longevity may lead to the discovery of the fundamental molecular mechanisms of senescence, and to the development of therapeutic interventions that simultaneously promote longevity and postpone the onset of multiple age related diseases. Cawthon (R03 AG14495), using genealogical data from Utah, is identifying families with patterns of longevity that might be genetic in origin. Individuals (of both sexes) from sibships containing both a late fertile female proband (age at last birth 48+) and a long-lived proband (female 98+ or male 95+) had a risk of living into their early 90s that was more than 3 fold that of individuals from sibships identified simply on the basis of having a long-lived proband. The association of late fertility in females with longevity in relatives of both sexes supports the hypothesis that a gene or combination genes is contributing to slower aging in some individuals from these families, allowing female fertility to be sustained unusually late in life, and making the attainment of extreme longevity more likely for both sexes. Gavrilova et al. (P20 AG12857, R03 AG13698), using genealogical data on longevity in European royal and noble families, find that the heritability estimates for longevity are much higher for fathers who lived 70 years or more, than for fathers who lived 30 years or more (e.g. 58% ± 12% vs. 20% ± 4% for daughters). While there are several biological explanations, social factors cannot be ruled out.

Childhood and young adulthood predictors of health and mortality.

There is increasing evidence that one's socioeconomic status in childhood and early adulthood can increase the risk of mortality in adulthood. Epidemiological studies have also linked the early life socioeconomic environment and its affect on growth and development to many adult chronic diseases, such as heart disease, hypertension and diabetes mellitus. This is a controversial issue, with deep implications for public health and other interventions. (See 1% Transfer initiative on Health Across Generations and Life Course).

Preston, Hill and Drevenstedt (R37 AG10168) find that for an African American cohort born early in this century, early life conditions - farm background, having literate parents, and living in a two-parent household - predict survival to very advanced ages. These results suggest a positive association between childhood mortality risks and those in adulthood, and calling into question further the heterogeneity explanation of the observed mortality crossover between Blacks and Whites at older ages.

Costa (R29 AG12658) finds that socioeconomic differences in birth weights were relatively small among babies born between 1910 and 1932, and have narrowed since that time. Among babies born between 1910 and 1932 most of the difference in birth weights by social class could be accounted for by differences in maternal height, suggesting that poor nutrition during the *mother's* childhood had an intergenerational effect. These findings concur with the work of David Barker (1998).

Previous findings from the Nun Study (Snowdon R01 AG09862), indicate that low linguistic ability in early life has a strong relationship in late life to poor cognitive function, risk of

dementia, and the number of Alzheimer's disease lesions in the brain. New findings indicate that low linguistic ability, as indicated by low idea density demonstrated in autobiographies written at an average age of 22 years, was significantly associated with a high risk of all cause mortality 58 years later. Low linguistic ability in early life may reflect suboptimal neurological and cognitive development, which might increase susceptibility to aging-related declines and disease processes late in life.

Predictors of health and mortality in adulthood.

It has been long recognized that marriage has a mediating effect, due to selection and/or protective factors on mortality. The effect appears to be stronger for men than for women. This relates to previous work by Lillard and Panis (R37 AG08346). However, little attention has been given to spousal characteristics. Crimmins (R01 AG11235) finds that having a spouse with higher education is a benefit for women; and low education spouses remove some benefits for more educated men.

Using HRS, Waite and Hughes (R03 AG14816, P20 AG12857) find strong and consistent patterns of differential levels of physical, emotional and cognitive functioning for adults in their 50s and early 60s by family structure and living arrangements. The highest levels of functioning are for married couples living alone, with married couples living with children a very close second. Single adults living in complex households show the lowest levels of functioning on all dimensions. Deficits in functioning for those in unmarried and complex households are reduced but not eliminated when demographic characteristics and household resources are considered.

The AHEAD includes innovative questions on subjective survival probabilities. Hurd (R01 AG12921) finds that the subjective assessment of survival by an individual is predictive of actual survival. The subjective survival probabilities are strong predictors of mortality between the waves even when self-assessed health is included as a predictor, indicating that subjects are aware that health and mortality chances, while related, are not identical. These findings relate to previous findings by Idler (R01 AG11567) on self-reported health and mortality reported in previous years.

Occupational characteristics

Costa's (R29 AG12658) analysis of Union Army data indicates that the shift from manual to white collar jobs and reduced exposure to infectious diseases were important determinants of declines in chronic disease rates among older men since the early 1900s. For example, she finds that the prevalence of respiratory conditions fell by 70%, that of arrhythmias, murmurs and valvular heart diseases by 90%, atherosclerosis by 60%, and joint and back problems by 30%. Occupational shifts accounted for 15% of the decline in joint problems, over 75% of the decline in back problems, and 25% of the decline in respiratory difficulties. She suggests that the full impact of the decline in infectious disease rates and of continued shifts toward white collar work and the mechanization of tasks may not be seen until 2035 or later when the baby boomers will begin to reach age 90. This relates to the Manton/Freedman findings on the disability decline discussed above.

Crimmins's (R01 AG11235) results from the HRS indicate that that there has been an inappropriate emphasis on the deleterious effects of being in either management or physically demanding jobs. Instead, Crimmins finds service jobs to be the most harmful to health. In related, but separate research, the Whitehall II team of researchers (Marmot, AG13196) have made important contributions in the field of psychosocial work characteristics and their relation

with coronary heart disease (CHD). Not only did low control at the workplace predict subsequent CHD, but that this association was an important part of the explanation of the social gradient in CHD.

Race

Typically, the racial differentials of health and mortality are examined with respect to only one or two determinants. Waite and Hughes (R03 AG14816, P20 AG12857) take a more comprehensive approach in their unpublished study, arguing that marital status and household structure are potentially key features of the roles people are required to play and of the environment in which disability is created or avoided. Using the HRS, they find that black and Hispanic adults consistently function at lower levels than whites on physical, emotional, and cognitive dimensions. These groups also tend to have lower household incomes, fewer assets and lower levels of education than whites of the same age, and are more likely to live in unmarried or complex households than whites. Thus, black and Hispanic older adults are likely to be disadvantaged both in their levels of physical, emotional and cognitive functioning, and in the levels of support that they receive in their households, the demands that those that they live with make upon them, and the resources that they can bring to bear on any problems that arise. Black adults, and to a lesser extent, Hispanic adults suffer from a *combination* of threats to their well-being that includes demanding and resource-poor living arrangements and family structures plus relatively low levels of physical, emotional, and cognitive functioning. Together these point to a vulnerable and risk-filled transition from middle to old age for these groups. This also points to the need to assess a wide range of variables.

Using the National Health and Nutrition Examination Survey I: Epidemiologic Follow-up Study, Ferraro (R01 AG11705) found self-reported morbidity to be a significant predictor of mortality among both White and African Americans. Survey respondents received a detailed medical examination by a physician and were asked about the presence of 36 health conditions at baseline. Results indicate that self-reported morbidity is equal or superior to physician-evaluated morbidity in a prognostic sense. Both types of self-reported and physician-evaluated morbidity predict self-assessed health among White respondents, but physician-evaluated morbidity is not related to either self-assessed health or mortality among African-American respondents. The differences could be due to self-reporting differences among Black and White respondents, the unique conditions afflicting Black and White respondents, the way in which physicians evaluate both groups, and/or racial differences in medical care use. Both measures of morbidity, self-assessed and physician-evaluated, may well underestimate the true prevalence of disease among African Americans, and these results suggest that the Black/White morbidity gap may be larger than commonly accepted.

Health of immigrants

Swallen (R03 AG14813-01) finds (in unpublished research) that immigrants to the United States have lower rates of lethal diseases such as heart disease, cancer and stroke than do persons born in the United States. It has been previously documented that immigrants have better self-rated overall health, and self-rated health has shown to be a strong predictor of mortality. It does not appear that immigrants have a different method of rating their own health than U.S. born persons, so the differences in self-reported health can be seen as real differences. These findings indicate that the cost of immigrants to social programs such as Medicare may be less than that of U.S. born persons. However, immigrants have worse emotional health, and higher rates of depression, and may need to be targeted by additional mental health programs.

Future directions.

Improved health and functioning at older ages may have profound implications for public policies in the economic, social, health care and technology arenas. DPE will continue to stimulate research that may disentangle the complex biological, epidemiological, demographic, and economic evidence concerning the relative contributions to improvements made by many factors.

Changing disability rates have fundamental implications for Medicare policy and public policy for the elderly more generally. Future research should examine lifetime rates of disability, lifetime Medicare spending resulting from disability, and the Medicare costs and benefits of disability reduction. Research should also be established to examine the sources of reduction in disability rates, to estimate the implications of reduced disability for the economy, to estimate the value of length and quality of life changes resulting from disability reduction, and to forecast the public and private sector impacts of changes in disability.

New data sets and enhanced extant data sets are important resources with which to examine important issues. DPE has contracted the National Academy of Sciences Committee on Population to prepare a workshop later this year that will focus on the value and difficulties of collecting biological data in social science surveys. Another workshop, also organized by the NAS CPOP will study the collection of cross-national data on aging.

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List of Funded Grants

K01 AG00554, Shiro Horiuchi, Relationships between Aging and Mortality
K01 AG00588, Douglas Ewbank, Demography & Economics of Alzheimer's Disease
P01 AG08761, James Vaupel, Oldest-Old Mortality – Demographic Models & Analysis
P20 AG12815, Michael Hurd, RAND Center for the Study of Aging
R01 AG12921, Michael Hurd, Using Subjective Information to Explain Saving Decisions
R01 AG09862, David Snowdon, Independent & Dependent Life in the Elderly
R01 AG11235, Eileen Crimmins, Active Life Expectancy in the Older Population
R01 AG11552, John Wilmoth, Measurement and Analysis of Oldest-Old Mortality
R01 AG11705, Kenneth Ferraro, Aging & Health Assessments Among Black & White Adults
R01 AG11758, Mark Hayward, Active Life Expectancy in the Older Population
R01 AG13196, Michael Marmot, Changes in Health – Socioeconomic Status & Pathways
R03 AG14495, Richard Cawthon, Selection of Families for Genetic Analyses of Longevity
R03 AG14816, Linda Waite, Functioning Community & Living Arrangements of Elders
P20 AG12857, Linda Waite, Center on Demography and Economics of Aging
R03 AG14228, James Carey, Elderly and Nature
R03 AG14813, Karen Swallen, Health, Wealth & Work – Immigrants in the U.S.
R29 AG12659, Dora Costa, Health of Young Adults – Evidence, Causes and Outcomes
R37 AG07025, Kenneth Manton, Demographic study of Multiple Causes of Death
R37 AG10168, Samuel Preston, African-American Mortality, 1930-1990
P50 HD12639, NIA co-funding to RAND Population Center

Health and Independent Functioning:
Identifying Risks and Designing Interventions to Improve Outcomes

Marcia G. Ory

Significance of Program Activity

Advances in research have clearly demonstrated the critical role of behaviors and lifestyle in promoting health and preventing disease and disability among middle-aged and older populations. We have also made strides in identifying the psychosocial factors that moderate the way in which individuals interpret and respond to symptoms. This research has been important in the development of interventions to support behaviors that promote health and to eliminate those that put older people at risk for illness and disability. The following are examples of research that expand current knowledge of clinical, social and behavioral factors that either improve the health and functioning of older populations or detract from them.

Program Activities

In the past year program staff has reconceptualized the psychosocial geriatrics research portfolio within an aging and behavioral medicine framework. This area of research focuses on examining the dynamic interrelationships among aging, health and behavior processes. It expands traditional studies in behavioral medicine, by adding an aging perspective as well as being concerned with the influence of the socio-cultural environment on the development and maintenance of a wide range of health and illness behaviors (e.g., healthy lifestyle practices, medical self management, and coping with chronic illnesses and disabilities). Major activities to further research in this area include: 1) the co-sponsorship of two trans-NIH RFAs (one disease prevention through behavioral change and a new one on Centers for complementary and alternative medicine) and two new program announcements (one on health care encounters and a second one on aging and medication use); 2) publication of an edited Volume on *Self-Care in Later Life* and two special journal supplements including *a Health Services Research* issue on aging and primary care, and a *Research on Aging* issue on aids prevention in older populations; and 3) the planning for two major conferences in 1998-1999, one on medical self management for chronic illnesses and disabilities and another one on older patients and their doctors, including a follow-up of the May 1998 planning meeting to develop a collaborative US/German research initiative on determinants and consequences of different doctor-patient interaction styles.

Research Advances

This year selected research advances will be organized to illustrate research accomplishments in the three major research foci within the aging and behavioral medicine portfolio: 1) psychosocial epidemiology; 2) disease recognition, coping and management, including physiological consequences of life stresses and burdens, and 3) social and behavioral interventions for health promotion, disease prevention, and disability postponement promoting healthy behaviors.

Psychosocial Epidemiology

Depression is a possible independent risk factor for the development of coronary artery disease (CAD) even after controlling for other cardiovascular risk factors. Men in the John Hopkins Precursor Study (Klag, AG 01760) who experienced an episode of clinical depression are at moderately increased risk for developing CAD even after other cardiovascular risk factors are controlled. Moreover, the increased risk from clinical depression appears to persist for more

than 10 years after the onset of the mental condition. Future research needs to assess the degree to which treatment for clinical depression either increases or decreases the risk for CAD.

Disease Recognition, Coping, and Management

Perception of the seriousness of bodily changes is a more important predictor of an elderly person's decision to seek physician advice than self-assessed health or psychological distress. Understanding what motivates an older person to visit a physician remains an important and intriguing research topic for study. Haug and colleagues (AG08557) explored specific bodily changes that lead to a physician visit over a four-month period. While perceived seriousness appears to be a key motivator in seeking medical attention, the majority of bodily changes were not judged to be serious. Older people may be minimizing their symptoms: fewer than 40% of persons who experienced symptoms associated with heart and circulation or muscular-skeletal systems (e.g., repeated pains in or near the heart, shortness of breath, swelling of feet, legs or hands, dizziness, pain or swelling in any joints, frequent backaches) sought a physician's care. More in-depth research is needed to explore personal meanings of "serious" in relation to specific changes and conditions to determine their role in decisions to contact a physician.

Social and behavioral interventions

A new technological device to assist elderly in medication management is demonstrating promising results. To promote health and safety in health care regimens, Letzt and associates (R44 AG10750) have developed an innovative hand-held electronic reminder and counseling device. The system is capable of storing reminder information for up to 20 different medications as well as other health care reminders (e.g., exercises, MD appointments, and over-the-counter medications taken regularly). Elderly who used the device were significantly more likely to recall information and relate it to specific drugs such as the potential for drug interactions with alcohol, sun sensitivity, side effects (e.g. dizziness), etc. Use of the device was associated with reductions in patient's stress related to managing their medications as well as a 20% improvement in medication compliance compared with a 4% improvement for the controls. The development of such devices is important for optimizing the therapeutic value of medication regimens as well as insuring drug safety.

Exercise program that encourages participation in community-based classes but is tailored to the individual demonstrates promise in promoting adoption of new physical activities and improvements in psychosocial well being. Stewart and associates (AG09931) evaluated the benefits of a program based on a public health model whereby older people living in low-income congregate housing participated in existing community-based physical activity classes and programs of their choice. The types of activities available included walking groups, Tai Chi, dancing, open swimming for seniors, strength training, and others offered at community locations. Those who adopted and maintained a new activity over the 6-month period demonstrated greater improvements in overall psychological well being and greater reductions in anxiety and depression relative to those who did not adopt and maintain a new activity. Researchers suggest that programs tailored to the individual can be effective in encouraging changes in lifestyle physical activity and might be usefully applied to HMO and community settings.

Compared to older people who engaged in a balance training program or educational group sessions, those who engaged in Tai Chi were more likely to maintain a motivation to continue exercising and to note positive changes in their daily life activities and life overall.

Those in the Tai Chi group were significantly more likely to report a noticeable effect on their life, effects on activities of daily life, change in normal physical activity, and a sense of having benefited from their exercise training. Importantly, about half of those who participated in Tai Chi voluntarily enrolled in additional classes and continued to practice the forms after the 15-week intervention ended. Participants reported they enjoyed the sessions and looked forward to attending. They also identified a number of benefits from participation that included increased alertness, relaxation, and better mental outlook. The more generalized feelings of confidence and psychological well-being, in the context of participating in an activity that has enjoyment, may provide the necessary motivation to make exercise a routine part of daily living (Wolf, U01 09124).

An intervention to reduce fear of falling in a group of physically vulnerable community-dwelling elderly demonstrates improvements but periodic "boosters" are needed to maintain self-efficacy and activity levels. Jette and colleagues (P20 AG11669) developed a cognitive-behavioral intervention that focused on increasing self-efficacy and an individual's sense of control over falling. Compared with subjects in the control group, participants in the structured group program reported increased levels of intended activity and greater mobility control at 6 weeks. Those who attended 5 or more sessions reported significant increases in falls efficacy and the ability to manage falls after the intervention and these remained significant at 12 months. These subjects also reported improvements in mobility and social behavior. However, the intervention effects appeared to diminish at 6 months suggesting the need for some type of activity to reinforce critical components of the program.

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Haug MR, Morris D, Musil C, Warner C. Older adults bodily changes and physician contact. Health: An *Interdisciplinary Journal for the Social Study of Health, Illness, and Medicine*. 1997 1(1): 81-105.

Kutner NG, Barnhart H, Wolf SL, McNeely E and Xu T. Self-report benefits of Tai Chi practice by older adults. *Journal of Gerontology: Psychological Sciences* 1997 52B(5):P242-P246.

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Future Directions

Research, particularly longitudinal, population-based studies, that continues to unravel the complex relationships between health, behavior and aging will remain an important focus. Attention will remain on studies that provide a better understanding of epidemiological predictors of disease risk so that interventions can be appropriately targeted. Research is just beginning to "scratch the surface" in our understanding about the ways elderly interpret symptoms, manage disease, and cope with physical limitations. As risk factors and vulnerable populations are identified, the next challenge is to test the effectiveness of behavioral change

interventions developed primarily in younger populations in diverse, older populations. In addition to strategies for initiating health behaviors and self-management skills in older populations, further research effort is needed to design interventions that can maintain desired changes over the life-course. These areas of research are particularly important at this historical juncture when elderly are being encouraged to enroll in managed care organizations and health care systems are redefining the way in which health care is provided to an aging population. The planned invitational conference on self-management in managed care settings should help generate a specific research initiative in this area.

Selected List of relevant funded grants

R01CA/AG64634, Adler, Women's cancer treatment choices by cohort and ethnicity
U01AG07929, DeFriese, National survey of self-care and aging
R37AG08557, Haug, Stresses, strains, and elderly physical health
P50AG11669, Jette, Research center on applied gerontology
R37AG11375, Kaplan, Health and functioning over three decades in Alameda county
R01AG12358, King, Exercise, functioning and stress in women caregivers
R01AG01760, Klag, Precursors of premature disease and disability.
R44AG10750, Letzt, Medication compliance assistance system
R37AG03501, Leventhal, Symptoms and emotional stimuli to health actions.
R01AG09931, Stewart, Increasing physical activity of elders in the community
R01AG09389, Tager, Epidemiology of aging and physical performance
U01AG09124, Wolf, Frailty & injuries: cooperative studies of intervention techniques.

Improving Medical Encounters: Older People and Physician Practice

Prepared by Marcia G. Ory

Significance of Program Activity

Older people seek physician advice and counsel when making decisions about their health. The extent to which older people comply with prescribed regimens to prevent and manage illness and disease depends on a myriad of complex factors, not least of which is the level of respect afforded to the older patient as an individual. Research attention must remain focused on identifying aspects of the medical encounter that influence clinical decision making and foster mutually satisfying interactions for the older patient, family members, and health care providers alike. This is especially important since the quality of medical encounters has been associated with a myriad of patient and physician outcomes (e.g., patient satisfaction, recall, compliance, health and functioning and even the likelihood of malpractice suits).

Program Activities

Interest in this research area was spurred with a 1995 NIA-sponsored Conference held to review current research and recommend needed research directions regarding older patients and their doctors. Several SBIR grants are beginning to develop and test different strategies for enhancing doctor-patient interactions, with a 1996 contract specifically soliciting research on the development of standardized assessment tools for examining the nature and quality of medical encounters. In 1998 a program announcement on health care encounters between elderly patients and their health care providers was released as a broad blueprint for research in this area. NIA staff provides leadership for the National Working Group on Older Patients and their Doctors, a group, which regularly sponsors symposia at the GSA. At the November 1998 this group will discuss the development of a U.S./German comparative research project to examine how health care encounters are affected by different systems of care.

Research Advances

African Americans hold different assessments of physician behaviors that can adversely affect patient's understanding of their illnesses and motivations to comply with recommended regimens. When compared to Whites, African American elderly believe that physicians do not display much compassion for and respect toward the elderly. However, African Americans are also more likely to feel that physicians engage in some prudent behaviors (e.g., avoiding unnecessary medical costs). Previous discrepancies in reported findings about racial differences in physician satisfaction may be clarified by distinguishing between different aspects of physician satisfaction, and examining differences within various segments of the older population. Greater research effort must be devoted to determining how race interacts with other factors to affect patient's assessments of doctor-patient interactions and the impact of such assessments on patient behaviors and health outcomes (Williams, P20 AG12058).

References

Jackson PB, George LK. Racial differences in satisfaction with physicians. *Research on Aging* 1998: 20(3): 298-316.

Lin TH, McKinlay JB, Irish JT. Predictors of uncertainty in medical decision-making with older patients. Poster presentation at the Association for Health Services Research. June 1998.

Freund KM, McKinlay JB, Irish JT, Lin TH, Moskowitz MA. Antidepressant use in Primary Care." Paper (to be)? presented at the American Public Health Association. November 1998.

Future Directions

Recent research has contributed to our understanding of the role of patient, physician and practice setting on diagnosis, certainty and treatment behavior. More work is needed to identify the complex factors that shape physician-patient relationships and influence medical decision-making and practice patterns. Critical attention is also needed to develop methodologies that enhance comparability between studies. For example, Cook and associates (N43 AG62118) have developed an instrument known as ADEPT, the Assessment of Doctor-Elderly Patient Transactions. Standardized assessment instruments like ADEPT will provide greater opportunity for describing the medical encounter and evaluating interventions designed to enhance communication. A 1998-1999 conference is planned to provide advice on designing and evaluating interventions that will enhance the medical encounter and its associated outcomes for older patients, their family caregivers, and/or health care providers.

List of grants related to doctor-patient issues

R29CA/AG64634, Shelley Adler, Women's breast cancer treatment choices.
N43AG AG72102, Alldredge, Elham, Assessment of doctor-patient interactions
R01AG08288, Belgrave, Self-care, compliance and physician style
N43AG-6-2118, Mary Ann Cook, Assessment of doctor-elderly patient encounters.
R01AG12025, Michael Goldstein, Activity counseling to lower CVD risk
R01AG12437-03, John McKinlay, Variability in medical decisions with older patients.
R01CA/AG70818, Rebecca Silliman, Adjuvant tamoxifen therapy in old age.
R01AG12381, Thomas Taylor, Physician policies in preventive hormone therapies.
R44AG11533, Sharon Tennstedt, Older Patients as Partners.
R44AG11787, Sharon Tennstedt, Physical and Mental Health of Older Persons.

Organizational and Institutional Influences on the Health and Well-Being of the Elderly

Sidney M. Stahl and Pauline Sieverding

Significance of Program Activities

BSR's investment in research addressing organizational and institutional emphases adds an important dimension to our scientific understanding of the health of aging populations. This macro-analytic approach asserts that health related outcomes are in part the product of the structure of social institutions (e.g., families) and social organizations (e.g., the health care delivery system), as well as the consequence of individuals who act or are acted upon in various settings. For example, health related outcomes are the result of the patient's condition upon entry into a health care setting, the processes he/she undergoes within that setting, and the organization of the setting which in multiple ways facilitates or hinders the care that is delivered. Examples of findings from two areas are presented to illustrate investigators' uses of this approach: (1) organizational consequences of health care institutions, specifically, for residents of nursing homes and (2) findings related to elder abuse research, which is at the intersection of health care organizations and family structure.

Program Activities

Activities in this area of research have been targeted at three substantive domains. (1) *Health Care Organization* activities include: [a] publication of a ***Supplement*** to ***Health Services Research*** on "Organizational Issues in the Delivery of Primary Care to Older Americans," Vol 33, June 1998; [b] publication of an article "Views from Funding Agencies. The National Institute on Aging" in ***Medical Care***, Vol 36, August 1998; [c] membership on the NIH-wide committee to define the agency's role in health services research; and [d] participation in several invitational conferences (Robert Wood Johnson Foundation and the Milbank Memorial Fund; the Soros Foundation; and the National Congress on Improving Care at the End of Life) to help establish a research agenda on organizational responses to end of life care. (2) *Elder Abuse*: [a] participation in several activities related to organizational responses to elder abuse, including a Department of Justice Task Force and the DHHS-wide Violence Against Women initiative; [b] participated in NIH-wide consortium on violence in families. (3) *Older Workers and Work Organizations*: [a] sponsoring a Workshop on Work Organizations and Older Workers (October 1997); and [b] participation in a Program Announcement with the National Institute of Occupational Safety and Health (along with NIAMS, NIEHS, and NHLBI) to solicit research on the impact of the organization of work and work place settings on older workers.

Research Advances

Health Care Institutions – Nursing Homes

Numbers and training of nursing home staff contribute to resident morbidity and mortality through their impact on resident care and nutrition. Kayser-Jones (AG10131) found several significant factors that impact institutionalized residents' health: inadequate numbers and poorly trained and supervised nursing home staff; lack of ethnic food; undiagnosed swallowing disorders; and poor oral health (Kayser-Jones, 1996; Kayser-Jones, 1997). Kayser-Jones's research emphasizes the role that nursing home organizational structure plays in the health of institutionalized elderly. Because of under-staffing, physician ordered oral supplements are ineffective (Kayser-Jones, Schell, et al., in press). This research has impacted policy through Congressional testimony leading to concerns about the quality of nursing home care.

The removal of physical restraints is not associated with increases in falls, subsequent injuries, or psychoactive drug use among nursing home residents. Despite nursing home

reforms, some 300,000 residents of nursing homes live with prolonged restraints due to the "belief" that restraint reduction will increase fall-related injuries. In the first controlled clinical trial to test restraint reducing interventions, Strumpf (AG 08324) and colleagues found no increased risk of falls or injuries following restraint removal (Evans, et al., 1997). In fact, survival analysis demonstrates that the nursing home used as the control had twice the rate of fall related injuries when compared to intervention nursing homes with restraint reduction (Capezuti, et al., 1998). Strumpf also demonstrated that restraint reduction did not result in concomitant increases in psychoactive medications. Psychotropic drug administration actually diminished over the period of diminished restraint use (Siegler, et al., 1997).

Elder Abuse

The definition, measurement, and reporting of elder abuse are dependent upon organizations' perceptions of "acceptable" behavior. Definitions of abuse are varied and imprecise and encompasses many forms of behavior: physical violence, emotional abuse, exploitation, neglect, and self-neglect. The perception of abuse by individuals acting within social institutions (e.g., families) and organizations (e.g., health care providers), is frequently dependent upon non-specific societal definitions and attitudes of acceptable behavior. The lack of specificity from organization to organization, leads to under-detection of elder abuse (Hudson, 1997; Pillemer and Wolf, 1998 [from Finkelhor AG04333]). Recently, attention has focused on the role of cultural and societal attitudes in defining elder abuse by those charged with the responsibility of reporting the behavior, such as health care providers. Hudson (AG12575) finds that standardized definitions across social institutions and diverse racial populations does not exist (Hudson and Carlson, 1998). Mills and Malley-Morrison (in press; Markson, AG00220) find that judgments of abusiveness are content specific: abusive behaviors against senile or agitated elders are seen as more "justified" than against "helpless" elders. (NOTE: additional significant research on elder abuse is found in the section on "Hot Topics." That section features the seminal work of Mark Lachs (AG00580; AG14299) as reported in *JAMA* (Lachs MS, et al. 1998;280:428-432).

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Evans LK, Strumpf N, Allen-Taylor SL, Capezuti E, Maislin G, Jacobson B. A clinical trial to reduce restraints in nursing homes. *Journal of the American Geriatrics Society*. 1997;45:675-681.

Hudson MF. Elder mistreatment: its relevance to older women. *JAMA*. 1997;52:142-146.

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Lachs MS, Williams CS, O'Brien S, Pillemer KA, Charlson ME. The mortality of elder mistreatment. *JAMA*. 1998;280:428-32.

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Pear R.. Clinton urges crackdown on nursing home abuse. *New York Times*. July 22, 1998.
Pillemer K, Wolf RS. Elder abuse. In: Wallace RB, ed. *Public Health and Preventive Medicine*. Norwalk, CT: Appleton and Lange; 1998.
Siegler EL, Capezuti E, Maislin G, Baumgarten M, Evans L, Strumpf N. Effects of a restraint reduction intervention and OBRA '87 regulations on psychoactive drug use in nursing homes. *Journal of the American Geriatric Society*. 1997;45:791-796.

List of Grants Funded

R01AG14427, Katherine Berg, Outcomes Following SNF Post-Acute Care
R01AG13008, Michelle S. Bourgeois, Increasing Effective Communication in Nursing Homes
R01AG13987, Mary L. Fennel, Rural Hospital Linkages to Long Term Care Providers
R01AG14301, Margaret Hudson, Elder Abuse Screening Protocols
R01AG11930, Susan L. Hughes, Impact of Team Managed Hospital Linked Home Care
R01AG10131, Jeannie Kayser-Jones, Behavioral Context of Eating and Nutritional Support
K08AG00580, Mark S. Lachs, Predictors of Elder Mistreatment
R01AG14299, Mark S. Lachs, Functional Decline in Victimized Older Women
T32AG00220, Elizabeth W. Markson, Multidisciplinary Training Program in Aging Research
R37AG11624, Vincent Mor, Do Good Nursing Homes Achieve Good Outcomes?
K08AG00822, Charles P. Mouton, Impact of Domestic Violence on Health of Older Women
R01AG13843, Wee Lock Ooi, Nursing Home Environment and Morbid Outcomes
R01AG14412, Gregory J. Paveza, Aggression and Violence in Community Based AD Families
R01AG11155, Linda R. Phillips, Intervention for Abuse of Aging Caregivers
P50AG11711, Karl A. Pillemer, Cornell Center on Applied Gerontology
R01AG14474, Stephen B. Soumerai, Medicare Capitation and Quality of Care for Acute MI
R01AG08324, Neville Strumpf, Maintaining Restraint Reduction in Nursing Homes
R01AG15321, Gail M. Williamson, Caregiver Impairment: Impact on Elder Care
R37AG09692, Fredric D. Wolinsky, Panel Analysis of the Aged's Use of Health Services
R29AG11407, Sheryl I. Zimmerman, Facility Effects on AD Health Outcomes

NEW - Minority Aging Research

Sidney M. Stahl, Pauline Sieverding, Jared Jobe

Significance of Program Activities

Minority aging research is a critical component of the BSR program funding agenda. As such, BSR has invested significant funds and staff time in the development of issues related to minority aging research. These activities involve: (1) establishing several mechanisms for enhancing diversity in the professional workforce and for mentoring researchers for careers in research on the health of minority elders; and (2) facilitating research on causes and consequences of health related disparities between minority and non-minority elders. Several BSR programmatic and research areas focus on decreasing the minority health differential among older Americans.

Program Activities

Resource Centers for Minority Aging Research (**RCMARs**) are intended to strengthen and promote significant minority aging research by creating a research infrastructure which will (1) increase mentoring of minority investigators; (2) increase the numbers of all investigators conducting research on minority elder issues; (3) increase our understanding of how to recruit and retain older minority subjects in clinical and social research; and (4) develop social science and clinical measures that are culturally sensitive, reliable, and valid for specific racial/ethnic minorities. Now in the beginning of their second year, the accomplishments of the six RCMARs (five funded by NIA, one by NINR and all with significant cofunding from ORMH) have been impressive in meeting these goals. The six RCMARs are: Henry Ford Health System's *Research Resource Center for African American Aging* (Glenn Davis, PI; AG15286); the University of Michigan's *Center for Urban African American Aging Research* (joint with Wayne State University; James S. Jackson, PI; AG15281); Columbia's *Center for the Active Life of Minority Elders* (Rafael A. Lantigua, PI; AG15294; serving Hispanic and African American populations); Colorado's *Native Elder Research Center* (Spero M. Manson, PI; AG15292); North Carolina's *Center for Advancing Minority Aging Research Efforts* (Elizabeth J. Mutran, PI; NR04716; serving rural African Americans and American Indians); and University of California-San Francisco's *Resource Center for Aging Research in Diverse Populations* (Eliseo J. Perez-Stable, PI; AG15272; serving Hispanic, Asian, and African American populations). The Coordinating Center (Barbara C. Tilley) is located at the Medical University of South Carolina under a sub-contract from Henry Ford Health System.

An evaluation strategy for the RCMARs is currently under joint development by each of the Center's and will be available at the conclusion of the next Investigator's Research Seminar (February, 1999). The following summary presents a few of the RCMARs' accomplishments during their first nine months:

Number of minority investigators receiving pilot funding *	18
Number of minority supplements awarded	2
Other training experiences **	4
Attended NIA Summer Institute	7
New research project by associated faculty (funded)	5
Research project applications by mentored students submitted for external funding	5

Publications (& in press) by faculty and mentored students	53

* Note: 12 were required by the RFA
** Investigators supported elsewhere and receiving mentorship through RCMAR faculty

Selected highlights of the first nine months of RCMAR program activities:

• A primary RCMAR goal is to improve minority-aging research through strengthening and sharing measurement methodologies. To that end, RCMAR Measurement Core investigators participate in monthly conference calls to aid in the identification of common issues and solutions to increase the generalizability of findings across centers. A trans-RCMAR standard template for evaluating measures of health concepts in diverse populations was developed (UCSF), has been adopted by all six RCMARs, and is being used to review the validity of ADL instruments in diverse populations.
• A Bowen-Brooks Fellowship for Advanced Studies at Oxford for a RCMAR mentored investigator (Columbia) has been awarded.
• A minority based "report card" for access to health care is under development (Henry Ford).
• UNC is developing a database for African American churches and a measurement instrument to assess perceptions of opportunities and barriers in seeking health services.
• Twenty-three new investigators attended a Summer Training Workshop on African American Aging Research (Michigan), which covered conducting and publishing research on African American Elders and use of existing data sets to conduct research on the health and well-being of African American elders.
• Links between the IHS, Native advocacy organizations, and the Colorado RCMAR have been fostered.
• All six RCMARs participated in a poster session at the GSA meeting, November 1998.

Networks to Enhance Recruitment to Aging Research, a recent RFA, is intended to foster collaboration between professional organizations, academic institutions, and the National Institute on Aging, to increase the number of qualified and successful minority investigators in aging research. The RFA seeks to facilitate and broaden the interaction between these research institutions by linking (network) faculty at various sites in an attempt to increase the cultural and ethnic diversity of the research workforce in aging. NIA is especially interested in supporting a research environment within institutions and organizations that have strong links to colleges and universities with a high enrollment of minority students. Four Network grants will be recommended to the October 1998 Council:

1. University of Michigan (James S. Jackson, PI) with a link to the Michigan/Wayne State RCMAR; (AG16376)
2. American Psychological Association (James M. Jones, PI; AG16372)
3. Gerontological Society of American (Linda K. Harootyan, PI; AG16373)
4. Mercy College (Lynn M. Tepper, PI), a minority institution with strong links to the Columbia University RCMAR; (AG16375).

The four centers will form a cadre for creating and disseminating techniques and information on better methods of increasing the numbers of minority investigators for research careers in minority aging. The PIs will be asked to meet as a group with NIA staff at the November 1998 GSA meetings, as an informal kick-off for this activity.

Research Activities

Hispanic Established Populations for Epidemiologic Studies of the Elderly (Hispanic EPESE), a 1992 RFA, resulted in two grants, both of which significantly furthered our understanding of the processes of illness and disease in the U.S. Hispanic population. At the expiration of the RFA, the two PIs submitted and were awarded competing continuation grants: Kyriakos Markides, PI, University of Texas at Galveston (AG10939) and Richard Hamman, PI, University of Colorado (AG10940). Both are longitudinal studies of Hispanic elders with the objective of tracing the health and functioning of their target populations. Approximately 5,000 Hispanic elders have been studied for five years and will be followed for an additional period. Markides finds an association between depression and sociodemographic risk factors, chronic health conditions, disability, and cultural factors (Black AS, Markides KS, Miller TT. *Journal of Gerontology*. 1998;53:S198-S208). However, unlike chronic medical conditions associated with depressive symptoms in older non-Hispanic White and African Americans, those conditions most associated with depression in Hispanics had symptoms of substantial physical impairment, pain, and discomfort (Black SA, Goodwin JS, Markides KS. *Journal of Gerontology*. 1998;53:M188-M194). They also found that Mexican American disability was less than that of African Americans but greater than that of Other Whites and that the truncated range of socioeconomic status did not allow this usually high predictor variable to be a factor in disability (Rudkin et al., *Topics in Geriatric Rehabilitation*. 1997; 12:38-46).

Hamman found that the greater the integration into the social network, the greater the perceived quality of life for elder Hispanics in his panel (Baxter et al**.,** *Journal of Aging and Health*. 1997). In examining self-rated health the study also found that self-assessed health may less accurately reflect objective health in the Hispanic population than in the non-Hispanic White adults because of cultural and economic influences on the definitions of 'health' (Shetterly SM, Baxter J, Mason LD, Hamman RF. *American Journal of Public Health***.** 1996;86:1798-1801). Ethnic differences were also observed in instrumental activities of daily living (IADL); Hispanics were significantly more likely to need assistance on at least one IADL task (Shetterly SM, Baxter J, Morgenstern NE, Grigsby J, Hamman RF. *American Journal of Epidemiology*. 1998;147:1019-1027).

Other research involving minority elders constitutes a significant portion of the SSR/BSR portfolio. For FY98, 15 studies valued at just over $3 million were supported. These include, most notably: Gay Becker, Cultural Responses to Illness in Minority Aged (AG14152), who has found that the impact of chronic illness on daily life is greatly influenced by culture and acculturation and that cultural perceptions of 'being sick' and taking 'responsibility' for one's own health varies dramatically between ethnic groups (Becker G, et al. *Family Medicine*. 1998;30:173-178); Elizabeth Chapleski, Long-Term Care - Social Networks and American Indian Aged (AG11152); Raymond Coward, Race and Residence Differences in Long Term Care (AG11183). In addition Amasa Ford (Services by Black and White Elderly; AG07195), finds that contrary to expectations and popular belief, there are no significant racial differences in assistance use in community-dwelling elderly and has identified factors that aid in defining successful aging (Noelker LS, et al. *Research on Aging*. 1998;20:317-338). Peggye Dilworth-Anderson, "Structure and Outcomes of Caregiving to Black Elderly (AG12268), Wayne McCormick, Long Term Care Use in Japanese American Elderly (AG11143), and Myrna Silverman, Health Care Responses of Older African Americans/Whites (AG12899) are additional projects in the SSR/BSR portfolio with major objectives addressing minority/non-minority differences in health and health care delivery.

A number of important studies involving minority elders were in the APD/BSR portfolio, totaling 17 grants and involving over $5 million. A large, Phase II clinical trial, "Advanced Cognitive Training for Independent and Vital Elders," is being conducted at six field sites, with a study population of around 2,800 of which 1/3 will be African Americans (AG14276; AG14282; AG14260; AG14263; AG14289). The purpose of the trial is to determine whether cognitive interventions—memory, reasoning, and speed of processing—can promote independence in at-risk older adults. A key goal of the trial is to determine whether African Americans receive the same benefit from training as Caucasians. Another important study is the "Black Twins Study," Keith Whitfield, PI, a behavioral genetics study of 400 same-sex African American twin pairs and 200 siblings (AG13662). The study is assessing the trajectories of cognition, mental health, physical health, personality, health care utilization, and social variables. Denise Park's grant, "Aging, memory, and culture," (AG15047) focuses on differences in basic cognitive processes that exist between members of Asian and Western cultures and how these differences are magnified or moderated by the aging process. Robert Rubenstein's grant, "Bereavement in long term care," (AG13993) is assessing the effects of distinctive cultural and religious backgrounds of long-term care settings on the treatment and construction of death. Jersey Liang's grant, "Health and well-being among older-old U.S. and Japan (AG15124) seeks to examine cross-cultural differences in the dynamic linkages among social relations, financial well-being, and health status among the older-old.

Future Directions

With life expectancy continuing to rise across the U.S., the dramatic increase in the next century of the elderly proportion of our population will serve to widen the already significant gap in mortality rates between White and minority populations. The causes and consequences of these health related disparities must be understood to enable us to identify scientifically based solutions designed to address them. The research and infrastructure building activities of BSR have served to position NIA in a leadership position among Federal agencies dealing with research on aging minority populations. Mentoring programs within the six RCMAR centers and the four Network grantees will increase research on minority aging by developing a new generation of investigators, with expanded ties to multi-cultural communities and multiple points of research linkage. Working within this rich infrastructure environment, these researchers will develop the expertise and skills in studying issues of minority health, resulting in the expansion of our knowledge base of understanding the function of cultural influences on health, health care utilization, and the quality of care. This expansion of empirically based scientific knowledge will serve to further the complex process of achieving parity in health care for all aged Americans.

SECTION III: PROGRAM AND STAFF ACCOMPLISHMENTS, FY 1998

BEHAVIORAL AND SOCIAL RESEARCH PROGRAM
INTRA and INTER-AGENCY AGREEMENTS

Funding Received by NIA

OFFICE OF RESEARCH ON MINORITY HEALTH (ORMH)

Title: **Resource Centers for Minority Aging Research**
Y3-AG-8280-01
Amount: $1,811,669 + $750,000 per Taylor 5/27/98

ORMH provides funds to supplement NIA's commitment to the Resource Centers for Minority Aging Research (RCMARs). RCMAR's long-range goal is to decrease the minority/non-minority differential in health and its social sequelae for older people by focusing research upon health promotion, disease prevention, and disability prevention. This program is intended to create a research infrastructure around three objectives: (1) establishing a mechanism for mentoring researchers for careers in research on the health of minority elders; (2) enhancing diversity in the professional workforce conducting research on the health of minority elders; and (3) developing and deploying strategies for recruiting and retaining minority group members in epidemiological, psychosocial, and/or biomedical research dealing with the health of the elderly. (Contact: Sidney M. Stahl)

OFFICE OF BEHAVIORAL AND SOCIAL SCIENCES RESEARCH (OBSSR)

Title: **Center on Demography and Economics**
Y3-AG8377-01
Amount: $100,000

OBSSR provides funds to NIA so that administrative supplements can be provided to P20 AG12857, "Center on Demography and Economics", Dr. Linda Waite, PI. It will support the activity in collaboration with the Social Science Research Council examining strategies to conduct interdisciplinary research.

Title: **Resource Centers for Minority Aging Research**
Y3-AG-8394-01
Amount: $50,000

OBSSR provides funds to supplement NIA's commitment to the Resource Centers for Minority Aging Research (RCMARs). RCMARs were created to decrease the minority/nonminority differential in health and its social sequelae for older people by focusing research upon health promotion, disease prevention, and disability prevention. (Contact: Sidney M. Stahl)

Title: **RAND Mini-Med School for Economists and Demographers**
Y3-AG-8386-01
Amount: $10,000

OBSSR provides funds to partially support the RAND Mini-Med School, which was held on July 22-23, 1998. Co-funding was also received from the AARP Andrus Foundation. The Mini-Med School was designed to educate demographers and economists who do research on aging

issues, disease prevention and progression. Subject areas covered included genes, aging and longevity; cellular aging; Alzheimer's Disease; depression and bipolar disorders; and cardiovascular disease. Funds will be used to support the travel expenses of lecturers, student participants and NIA staff. (Contact: Richard Suzman)

Title: **98 OBSSR Research Awards Enhancement Program (REAP)**
Y3-AG-8397-01
Amount: $40,000

OBSSR provides funds to support training projects as part of the 98 REAP awards (Wise T32 AG00186-10).

Title: **Research Awards Enhancement Program (REAP)**
Y3-AG-7339-02
Amount: $26,374

OBSSR provides funds to support the second year of the FY97 REAP awards (T32 AG00246-02, Ronald Lee's training grant).

OFFICE OF ALTERNATIVE MEDICINE (OAM)
Title: **Research Awards Enhancement Program (REAP)**
Y3-AG-8403-01
Amount: $38,125

OAM provides funds to support 98 REAP award to R03 AG15686-01, Role of Spirituality in Adjustment After Cardiac Surgery, University of Michigan, Amy Ai.

OFFICE OF RESEARCH ON WOMEN'S HEALTH (ORWH)
Title: **Research Awards Enhancement Program (REAP)**
Y3-AG-8395-01
Amount: $157,270

ORWH provides funds to support 98 REAP award to R01 AG15145-01A1, Clarice Veit.

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC), NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)
Title: **Support for research grant (Amick, R01 AG13036-01)**
Y3-AG7304-03
Amount: $80,000

NIOSH transfers $80,000 to NIA in partial support for the research project grant (1 R01 AG 13036-01, Principal Investigator, Benjamin C. Amick, III, Ph.D.) entitled "Working Lives and Mortality in an Aging National Cohort".

Funding Provided by NIA

HEALTH CARE FINANCING ADMINISTRATION
Project title: **HCFA Medicare Database Costs for NIA**
Y1-AG-7169-07

Amount: FY98 $18,000

NIA transfers funds to the Health Care Financing Administration (HCFA) to support the data processing and logistical arrangements necessary to provide Medicare claims data to NIA's research projects.

Project title: **HCFA Medicare Database Costs for NIA**
Y1-AG-7169-08
Amount: FY98 $21,200

NIA transfers funds to the Health Care Financing Administration (HCFA) to support the data processing and logistical arrangements necessary to provide Medicare claims data to NIA's Mayeux program project (5 P01 AG07232-10).

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

Title: New Immigrant Survey -- Pilot (NIS-P) 5 R01 HD33843-03
Y2-AG-8391-01
Amount: $162,036

NIA provides fund to supplement NICHD's "The New Immigrant Survey Pilot (NIS-P) Study to improve the usefulness of the pilot data, make the NIS more responsive to NIA interests, as well as assist in developing and costing-out best procedures for public release of the full survey data. This supplement would permit the study to: 1) complete a telephone follow-up of the pilot sample with emphasis on achieving a higher response rate for older age groups; 2) develop and pilot the full survey instruments; and 3) produce a summary paper describing preliminary results from the NIS-P for the older population. This study is currently co-funded by the Immigration and Naturalization Service (INS) and the National Science Foundation (NSF). The NIS-P is the first step in a plan to carry out a comprehensive, multi-cohort longitudinal survey of new legal immigrants to the US and their children, based on probability samples of INS administrative records. The NIS has the objective of improving the database on immigrants to the US in order to substantially advance understanding of the socioeconomic status of immigrants and their children, and the effects of immigration in the US. The objective of the Pilot Study is both to obtain new information on immigrants and to test the cost-effectiveness of the NIS design.

NATIONAL SCIENCE FOUNDATION (NSF)

Title: **California Census Research Data Center (CCRDC)**
Y1-AG-8399-01
Amount: $150,000

NIA provided $150,000 in FY 98 co-funding to two Research Data Centers (RDCs) funded by the National Science Foundation and staffed by the Census Bureau, at the University of California Los Angeles (SBR 9812174) and the University of California at Berkeley (SBR 9812173). By establishing these RDCs on the West Coast, the location disadvantage (and high costs) currently confronting a large and distinguished group of social science researchers will be reduced. This will allow more researchers to develop research projects that would make use of microdata from the Census Bureau's economic surveys of business establishments and firms or from its demographic surveys of households and individuals. NIA co-funding will be used to support aging-related databases and analyses conducted by these 2 RDCs. NIA has committed to continued co-funding in FY 99 and FY 2000.

MEMORANDUM OF UNDERSTANDING

AGENCY FOR HEALTH CARE POLICY AND RESARCH (AHCPR)

Title: Patient Preference for Hysterectomy and Alternatives
Amount: $100,000

NIA is cofunding 1 RO1 HS09027-01A1 (Stephen Hulley). This longitudinal study follows women through the decision making process regarding non-emergent hysterectomy. Patient preference is examined using risk factors such as racial/ethnic identity and the organization of medical care for women presenting with leiomyomata, dysfunctional uterine bleeding, chronic pelvic pain, or uterine prolapse. Process and intervening variables include: symptoms, functioning, well being, health knowledge and attitudes, satisfaction, short- and long-term preferences, and current health state. (Contact: Sidney M. Stahl)

Title: HCSUS and the Older HIV-infected American
Amount: $50,818 per year for five years (FY 1995-99)

NIA is co-funding the HIV Cost and Utilization Study (HCSUS), a large-scale multi-Institute sponsored study, which is being conducted under a cooperative agreement between the Agency for Health Care Policy Research and RAND. The broad agenda for the HCSUS includes the study of the cost and utilization of care, access to and quality of care, quality of life, clinical status, coping and social support, caregivers, medical providers, knowledge, and mental health and drug abuse related issues. The core study is examining approximately 2900 patients and their providers selected from 58 major and 63 minor practice sites in 28 urban locales plus 44 providers in 5 rural locales. Products anticipated from the HCSUS include a series of Rapid Release Reports, which will contain basic information on key variables.

NIA is providing $50,818 in each of FY95-FY99 to engage in activities such as: enhancements of the Rapid Release program to include age-specific comparisons of basic variables in these high profile reports; scientific products focusing on the older HIV-infected patient. Specific topics include comparisons of the pre-Medicare population to younger populations with respect to gender, race, risk group, prevalence of mental and drug abuse disorders, access to and source of care, unmet needs, insurance status and effects of insurance status, and clinical/health status including disability, disease severity, quality of care, and other parameters.

Title: Primary Care Performance and Outcomes in Medicare
Amount: $50,000

NIA is cofunding 1 R01 HS09622 (Dana G. Safran). This longitudinal study compares primary care performance and outcomes of conventional Medicare provider organizations with the same set of variables for managed care organizations. These variables include: accessibility, continuity, comprehensiveness, coordination, clinical management, evidence of a "whole person" orientation, and a sustained clinician-patient relationship. Outcomes monitored are: changes in functional health, adherence to medical advice, HMO disenrollment, patient satisfaction, and mortality. The study will use 15,000 randomly selected Medicare beneficiaries receiving care in 59 large and mature HMOs and from conventional practices in 14 states. The study will guide the formation of meaningful and productive quality monitoring and improvement strategies for the Medicare program. (Contact: Sidney M. Stahl)

FOGARTY INTERNATIONAL CENTER

Title: **FIC International Training and Research in Population and Health**
D43 TW/HD00657 and D43 TW/HD00633

Amount: $113,539

NIA provided $113,531 in FY 98 co-funding to 2 FIC International Training and Research in Population and Health (ITRPH) grants (D43 mechanism). This program enables NIH grant recipients to extend the geographic base of research and training efforts to developing nations, in support of international population priorities. The program enhances domestic population research programs through training and international collaborative studies, assists scientists from developing nations to contribute to global population research efforts, and advances knowledge in support of population policies appropriate for their countries. NIA support is being used for aging-specific research training to the University of Michigan (Arland Thornton, 1 D43 TW/HD00657) and University of North Carolina (Linda Adair, 1 D43 TW/HD00633). NIA has committed to providing $159,631 in fy99 co-funding.

CONFERENCES AND WORKSHOPS

Work shop on Work Organizations and Older Workers, Bethesda, MD, October 1997. In conjunction with the Program on Age and Structural Change (Dr. Matilda White Riley), BSR sponsored a workshop on Work Organizations and Older Workers, October 27, 1997. The workshop participants (Richard Burkhauser, Syracuse; Arne Kalleberg, UNC; George A. Kaplan, Michigan; Karyn Loscocco, Albany; John B. McKinlay, NERI; and Eliza Pavalko, Indiana) discussed the formation of a research agenda for BSR/NIA which will attempt to integrate two largely separate fields: work organizations and aging. Workshop participants discussed hypotheses and research concerning the mismatch between the needs and wishes of older people and the age-restricted opportunities for work. A Program Announcement will result from the workshop. (Contact: Dr. Stahl)

Tenth International Meeting of REVES, Tokyo, Japan, October 9-11, 1997. The tenth annual meeting of the Reseau Experience de Vie en Sante (REVES) focused on "Active Life Expectancy in Asia". For the first time, researchers from a number of Asian countries presented estimates of active life expectancy from their countries. These Countries included Malaysia, the Philippines, South Korea, and the People's Republic of China. In addition, the meeting addressed issues of socioeconomic disparity in health outcomes, the relationships of population aging to health and health care usage and the determinants of longevity. Approximately 70 international scientists, including 20 representatives from the United States, attended this meeting. (Contact Ms. Patmios)

Forecasting Morbidity, Mortality and Disability in Noncommunicable Diseases, Cambridge, MA, October 22-23, 1997. NIA sponsored an informal workshop on projection methodologies to forecast intervention outcomes in noncommunicable diseases which was organized by the Burden of Disease Unit, Center for Population and Development Studies, Harvard University School of Public Health and the Aging and Health Unit, World Health Organization (WHO). In the past, WHO has focused the majority of their research on projection methodology for communicable diseases. More recently, WHO has moved toward adopting a focus aimed at forecasting non-communicable disease trends, including the impact of interventions. The aim of this workshop was to facilitate the development of projection methodology that could model the cost-effectiveness of interventions. (Contact Ms. Patmios)

A NIA Planning Meeting on USA-BRD Health Care Systems and aging research was held in Bethesda, Maryland June 17-18, 1998. The objective of the planning meeting was to

identify promising areas for comparative research between Germany and the United States on issues found to be of critical importance in behavioral and social science research into the health of their older populations. A comparative approach was taken to accomplish this objective, by considering similarities and differences within the two societies and systems of care. Using this framework, two conditions were selected for possible joint research (i.e., Alzheimer's care and hip fracture treatment/recovery). Special attention will be paid to the influence of health care systems and doctor-patient interactions. Next steps include further discussions on identifying specific research questions and methodological approaches as well as naming potential collaborators in both settings. Present at the meeting were: Dr. Ronald Abeles, Dr. Terrie Wetle, Mr. Leslie Stenull, Dr. Marcia Ory, Dr. Sidney Stahl (from the NIA), and Dr. Ronald Adelman, Dr. Thomas Prohaska, Dr. John McKinlay, Dr. Donald Light, Dr. Vincent Mor. (U.S. researchers) and Dr. Bernhard Badura, Dr. Ulla Walter, Dr. Reinhardt Busse, Dr. Fritz Henn, Dr. Gerhard Naegele, Dr. Susanne Zank (German researchers).

Annual Meeting of the American Economic Association, Chicago, IL, January 3-5, 1998. This year, a significant number of sessions at the Annual Meeting of the American Economic Association were dedicated to the economics of health and aging. Papers presented by NIA grantees varied from the "Economic Effects of Reducing Disability" to "401(k) Plans and Future Patterns of Retirement Saving." In all, over 30 papers on the economics of health and aging were presented and published in the *Papers and Proceedings of the 110th Annual Meeting of the American Economic Association*. (Contact Ms. Patmios)

Economics of Aging Press Briefing, Washington, DC, June 30, 1998. A press briefing was held at the National Press Club to present some of the significant research being done by NIA grantees on the economics of aging. Several leading Economists (including David Cutler, Alan Garber, Olivia Mitchell, James Smith and David Wise) came together to discuss their research on topics such as:

- macrodemographic-economic interrelationships (e.g., the aging-related public expenditures for Medicare and Social Security),
- the private costs of aging, including saving and consumption over the life cycle to determine how the coming waves of long-lived baby boomers are poised fore retirement,
- intergenerational transfers of wealth, time and caretaking within families and within society,
- refining measures of wealth among the middle-aged and elderly to make sure the data and analyses of them are reliable and meaningful. (Contact Ms. Patmios)

The Health and Retirement Study. The HRS Steering Committee (composed also of a number of federal government representatives) met on July 8, 1998 to consider add-ons, enhancements and extensions which include a new baby boom cohort (not necessarily HRS-linked); experimental test-bed samples; mail-out questionnaires on consumption, personality and preferences; an increased ratio of personal interviews; new employer survey content and scope; and additional health components to include medical exams, family genetic pedigrees, and blood collection.

NAS Workshop on Confidentiality. The use of linked data (e.g. health, economic, contextual, employer) presents extraordinary research opportunities to discover new scientific knowledge and to help in the evaluation and design of policies to deal with an aging society. At the same time, the use of linked data by researchers presents a complex set of challenges to maintain the confidentiality of survey respondents and citizens whose administrative records are entrusted to the government. The Committee on National Statistics (CNSTAT), in consultation with the

Institute on Medicine, will convene a two day workshop in FY 1999 to bring together NIA researchers with other users of linked data, experts in statistical disclosure limitation techniques, such as data cloaking and uncloaking, experts in informatics, and experts concerned with confidentiality practices and administrative and legal procedures. NIA held a pre-planning meeting on July 10, 1998 to begin discussing the workshop's agenda and focus. In addition to staff from NIA and CNSTAT, participants included representatives from NCHS, HCFA, NICHD, NLM, NIH/OD, ACPR, and SSA.

Mini-Medical School for Demographers and Economists, Santa Monica, CA, July 22-23, 1998. NIA sponsored the first annual RAND Mini-Medical School for Demographers & Economists (Mini-Med) in Santa Monica, CA. The Mini-Med was designed as an invitational series of lectures about biomedical issues related to aging. The sessions focused on the Aging Process, Genes, Aging and Longevity, How and Why Cells Age, Alzheimer's Disease, Depression and Bipolar Disorders, Cardiovascular Disease and the NIA Geriatrics Program. The sessions were lead by expert physicians who lectured on how the practice of medicine can inform and improve social science research. The purpose of the Mini-Med School was for participants to gain a greater insight into the science of aging and a greater understanding of relevant medical issues. (Contact: Ms. Patmios)

Summer Institute on Demography, Economics and Epidemiology of Aging, Santa Monica, CA, July 24-26, 1998. This year marked the fifth annual RAND Summer Institute on Demography, Economics and Epidemiology of Aging sponsored by the National Institute on Aging. This year's institute was organized around five different sessions, 1) Retirement and Savings, 2) Demography of Family Structure, 3) Health Inequalities, 4) Data Sets on Aging and 5) Placing a Value on Health. Each session began with a "Master Lecture" from a leading expert in the field who discussed the latest results from their own on-going research. One or two "Additional Perspectives" then followed the Master Lecture to encourage discussion. (Contact: Ms. Patmios)

Summer Institute on Economics of Aging, Cambridge, MA, July 27-31, 1998. Since 1993, the National Institute on Aging has been providing partial support to the National Bureau of Economic Research (NBER) for their Annual Summer Institute on the Economics of Aging. During the 1998 workshop, leading Economists from around the world presented papers on topics such as the effect of health and caregiving responsibilities on retirement decisions, the adequacy of retirement savings, factors affecting the amount and allocation of retirement saving, a survey of pensioners in South Africa, the growth of social insurance, the intergenerational effects of bequests, the interaction of socioeconomic status and mortality, the effect of Medicare rules on various aspects of health care, and the effect of longevity on the long-term care market. Both the formal sessions and the informal interactions taking place during the workshop provided a valuable opportunity for the exchange of ideas about issues in aging and aging-related research. (Contact: Ms. Patmios)

REQUEST FOR APPLICATIONS/PROPOSALS AND PROGRAM ANNOUNCEMENTS

Innovative Approaches to Disease Prevention Through Behavior Change OD-98-002
NIH Guide, Vol. 26, Number 36, October 24, 1997
Invites applications for a 4-year research grant program to test interventions designed to achieve long-term health behavior change. The health behaviors of interest--tobacco use, insufficient exercise, poor diet, and alcohol abuse-- are among the top ten causes for morbidity and

premature mortality. This Request for Applications (RFA) solicits intervention studies aimed at either comparing alternative theories related to mechanisms involved in behavior change, or assessing the utility of a particular theoretical model for changing two or more health-related behaviors, rather than simply demonstrating the efficacy of a single behavior change program. Application Receipt Date: May 21, 1998. (Contact: Dr. Ory)

Networks to Enhance Minority Recruitment to Aging AG-98-002

NIH Guide, Vol. 26, Number 39, December 5, 1997

As the National Institute on Aging (NIA) continues to work to strengthen training of minority researchers in aging, it is becoming increasingly apparent that a number of professional organizations and academic institutions have developed substantial networks of faculty and students committed to bolstering the training of minority researchers. This initiative is intended to foster collaboration between such organizations and the NIA in order to increase the number of qualified and successful minority investigators in aging research. Application Receipt Date: March 10, 1998. (Contact: Dr. Abeles)

Methodology and Measurement in the Behavioral and Social Sciences TPA-98-025

Release Date: February 27, 1998 (Announced with NCI, NIAAA, NIDA, NICHD, NHLBI, OBSSR & OAM)

Encourages applications in six general areas of methodology and research. These areas include the processes that underlie self-reports, research design, data collection techniques, measurement, data analysis techniques, and related ethical issues. Applicants are particularly encouraged to consider studies that address one or more of the following key issues: 1) Methodology and measurement issues in research relating to diverse populations, i.e., populations that are distinctive by virtue of age, gender, sexual orientation, ethnicity, culture, literacy, or disability; 2) Issues in studying sensitive behaviors, such as drug use, sexual behavior, abortion, abuse and violence, and other covert or illegal behaviors; and 3) development of multidisciplinary and multimethod approaches to behavioral and social science research. (Contact: Dr. Jobe)

Implementation of the National Occupational Research Agenda OH-98-044

Release Date: April 24, 1998 (Announced with NIAMS, NIEHS, NHLBI & CDC)

The purpose of this grant program is to develop knowledge that can be used in preventing occupational diseases and injuries and to better understand their underlying pathophysiology. Thus, the following types of applied research projects will be supported: Causal research to identify and investigate the relationships between hazardous working conditions and associated occupational disease and injury; the nature and magnitude of special risk factors experienced by older and /or minority workers; methods research to develop more sensitive means of evaluating hazards at work sites; and evaluations of the effectiveness. Application Receipt Date: June 23, 1998. (Contact: Dr. Stahl)

Health-Care Encounters Between Elderly Patients, Physicians, and Other Care Providers PA-98-059

Release Date: April 28,1998 (Announced with NINR)

This Program Announcement focuses primarily on physician-elder patient interactions, but includes attention to the full range of health care providers in recognition of changing patterns in the delivery of health care. Research is solicited on the content, processes and outcomes of health encounters as well as demographic, psychosocial, cognitive and contextual influences. (Contact: Dr. Ory)

Secondary Analysis in Demography and Economics of Aging PAS-98-041
Release Date: March 20, 1998
To stimulate and facilitate secondary analyses of data related to the demography and economics of aging by providing support for 1) preliminary projects using secondary analysis that could lead to subsequent applications for other research project grant award mechanisms; 2) rapid analyses of new databases and experimental modules for purposes such as informing the design and content of future study waves; and 3) the development, enhancement and assembly of new databases from existing data. (Contact: Ms. Patmios)

Centers on the Demography of Aging RFA AG-99-001
Release Date: September 25, 1998
To encourage the further development of research in the areas of demography and economics of health and aging as requested by both Congress and the 1997 G8 Summit. These center grants will support the infrastructure necessary for research, new program development in selected areas, such as biodemography, the development of innovative national and international networks of researchers, the recruitment of new researchers into the field, the development and enhanced sharing of specialized databases (e.g. HCFA records), including rapid application of research results from these databases, and the development of statistical data enclaves for the analysis of large-scale, often longitudinal, databases with linked administrative data. Funds may also be used to develop trends in the burdens and costs of diseases in the older population in general, and in racial/ethnic groups. (Contact: Ms. Patmios)

SELECTED PUBLICATIONS

Research Highlights in the Demography and Economics of Aging
Research Highlights is a series of short reports prepared for NIA by Richard Woodbury as a cooperative activity of the NIA Centers on the Demography and Economics of Aging. The first issue entitled, "Health Insurance and Retirement" (May 1998) summarizes recent research findings on the relationship between health policy and retirement. The report concludes that health insurance availability induces more people to retire. The second issue of *Research Highlights*, "Social Security and Retirement Around the World" (June 1998), focuses on how population aging and early retirement has placed enormous financial pressure on the social security systems around the world. Results from the National Bureau of Economic Research (NBER) suggest that the trend in early retirement is primarily the result of social security systems offering older workers substantial incentives to leave the workforce.

Aging Trends and Forecasts
Aging Trends and Forecasts is a series of briefing papers prepared by the Population Reference Bureau for the National Institute on Aging. The most recent brief, "Electronic Access to Demographic Data on Aging" (Supplement, December 1997), provides email addresses and World Wide Web sites to help locate information and obtain data on the demographics of aging.

Directory of Population Aging Research in Europe
The Population Activities Unit (PAU) of the United Nations Economic Commission for Europe (UN/ECE), in collaboration with the National Institute on Aging, carried out a survey in 1995 and 1996 on aging-related research in Europe. The goals of the survey were to take stock of population aging-related research in the European countries, to identify innovative data collection and research strategies and high-quality survey instruments that can be used

throughout the region in future data collection and research efforts, and to find out what type of cross-national aging research should be initiated in Europe during the coming years. The survey was carried out in two waves. The first wave sought to take stock of a wide range of aging-related research. It covered over 300 projects from about 150 institutions and individuals. The results are published in this *Directory of Population Aging-Related Research Projects in Europe*. The second wave of the survey aimed at compiling additional detailed information on approximately 50 large scale, nationally representative research efforts, particularly those involving primary data collection with high-quality survey instruments. Results of the second wave have been published in a separate report entitled *Research on Aging in Europe: Demographic, Social and Behavioral Aspects* (see below).

Aging Research in Europe: Demographic, Social and Behavioral Aspects
Written by Emily M. Agree and George C. Myers for the United Nations Economic Commission for Europe, this report summarizes the major findings of a survey on aging-related research in Europe carried out by the Population Activities Unit (PAU) of the United Nations Economic Commission for Europe (UN/ECE), in collaboration with the National Institute on Aging. The over-riding conclusion of this report is that much of the social and bio-medical research in the field has been problem-driven rather than theory-driven and is still mostly descriptive rather than analytical. The authors suggest that closer collaboration between national and international institutions and researchers is necessary if aging research in Europe is to progress.

"Papers and Proceedings of the 110th Annual Meeting of the American Economic Association," *The American Economic Review,* Vol. 88, No. 2
This volume contains the Papers and Proceedings of the 110th annual meeting of the American Economic Association. Although the National Institute on Aging did not fund this publication, it encompasses many papers that were written by NIA grantees. Some of the aging-related sessions that NIA grantees participated in include 1) Social Security and the Real Economy: Evidence and Policy Implications, 2) Social Security and Declining Labor-Force Participation: Here and Abroad, 3) Informing Retirement-Security Reform, 4) Women and Retirement Issues, 5) Life-Cycle and Cohort Studies of Aging, 6) Demographic Trends and Economic Consequences, and 7) Intergenerational Relations.

Wallchart: Aging in the Americas into the XXI Century
Produced by the Aging Studies Branch of the International Programs Center, U.S. Bureau of the Census, with the support of the Office of Demography of Aging, National Institute on Aging and the Health Unit of the Family Health and Population Program, Pan American Health Organization (PAHO). This wallchart presents statistical information that highlights the present and future dimensions of population aging in the Americas and portrays the similarities and diversities that exist among nations.

Ory, Marcia G., DeFriese, Gordon H., and Duncker, Alfred P. The Nature, Extent, and Modifiability of Self Care Behaviors in Later Life, In M. Ory, G. DeFriese (eds.) *Self Care in Later Life*: New York: Springer Publishing Co., 1998.
This is a collection of papers emanating from a NIA sponsored conference to define various types of self-care and present emergent research findings and themes. This volumes documents epidemiological linkages between self care and health outcomes, discusses the contexts of self care processes, and then examines the development and evaluation of self care programs. It pays special emphasis to self-care in special populations within the U.S. as well as in international settings.

Ory, M.G., Cooper, J., and Siu, A. (eds.) ***Aging and Primary Care: Organizational Issues in the Delivery of Health Care Services to Older Americans*****. Special Supplement to** ***Health Services Research*****. June 1998.**
This is a set of articles originating in 1996 with a NIA sponsored Conference on Aging and Primary Care. Current research findings and future research directions are discussed on topics such as: managed care and the changing health care environment; intra and inter-organizational factors affecting the delivery of primary care to older Americans; the older client and providers in a consumer-centered healthcare environment; and methodological issues in the study of primary care delivery to older adults.

STAFF CHANGES

Dr. Ronald P. Abeles. Dr. Abeles is now Special Assistant to Dr. Norman Anderson, the Director of the NIH Office of Behavioral and Social Sciences Research (OBSSR). In addition Dr. Abeles is continuing, on a limited basis, some of his program development activities within the Behavioral and Social Research (BSR) Program at the NIA. His efforts will be devoted mostly to the Personality and Social Psychology of Aging Section within the Adult Psychological Development Branch (Dr. Jared Jobe) and towards developing international comparative research on aging, mainly in Germany, in conjunction with the Social Sciences Research and Aging Branch (Dr. Marcia Ory and Dr. Sidney Stahl).

STAFF ACCOMPLISHMENTS

Ronald P. Abeles

Workshops and Presentations Organized

- Staff Seminar on Intraindividual Patterns of Change with Aging, John Nesselroade, Department of Psychology, University of Virginia, and Paul Costa, GRC/NIA, November 7, 1998.
- Gerontological Research in Germany and the U.S.: Towards Intensified Cooperation and Future Strategies, Steering Committee, December 18, 1997.
- Planning Meeting on Health Care Systems and Aging in the United States and Federal Republic of Germany, Bethesda, MD, June 17-18, 1998

Publications

- R. Rockwell and R. P. Abeles, "Editorial: Data Archiving and Sharing is Essential to Science," *Journal of Gerontology: Psychological Sciences and Social Sciences*, vol. 53B, no. 1, January 1998, S5-S8.

Honors

- Fellow, American Psychological Society, 1997
- Chair-elect, Section on Aging and the Life Course, American Sociological Association, August 1998

Presentations

- Invited Lecture, *Career Opportunities at the NIA for Gerontologists*, Institute of Gerontology, University of Michigan, December 1, 1998
- *Funding Opportunities at the National Institute on Aging*, Symposium on Career Development, Division (20) of Adult Psychological Development and Aging, American Psychological Association, San Franscico, CA, August 17, 1998

Program Visits

- Institute of Gerontology and Department of Psychology, University of Michigan, December 1-2, 1998
- Twin research projects on behavioral genetics, Department of Environmental Health at the Karolinska Institute (Stockholm) and Institute for Gerontology at the University College of Health Sciences (Jönköping), June 10-12, 1998

NIH and NIA Committees

- Chair, NIH Behavioral and Social Sciences Research Coordinating Committee
  Chair, Subcommittee on NIH Behavioral and Social Sciences Seminar Series
- Member, NIH Committee on Review Integration of the Behavioral and Social Sciences (chair of various subcommittees)
- Member, OD/NIH ad hoc Advisory Committee on Data Sharing and Archiving
- Member, NIA Working Group on Minority Research
- Member, NIA Information Resource Management Steering Committee
- Co-chair, Steering Committee for Gerontological Research in Germany and the U.S.: Towards Intensified Cooperation and Future Strategies. Joint Project of the German-American Academic Council and the NIA.

Jared B. Jobe

Publications

- Lee, L., Brittingham, A., Tourangeau, R., Willis, G., Ching, P., Jobe, J. B., & Black, S. (in press). Encoding and forgetting as sources of error in reports on childhood immunization. *Applied Cognitive Psychology*.
- Pratt, W. F., Tourangeau, R., Jobe, J. B., Rasinski, K. A., London, K. A., Baldwin, A. K., & Smith, T. W. (in press). Asking sensitive questions in a health survey. *Vital and Health Statistics*, Series 6, No. 8 (DHHS Publication No. PHS 95-1083). Washington, DC: U.S. Government Printing Office.
- Stone, A., Turkkan, J., Bachrach, C., Cain, V., Jobe, J. B., & Kurtzman, H. (Eds.) (in press). The science of self-report: Implications for research and practice. Mahwah, NJ: Erlbaum.
- Shankar, S., Subar, A. F., Hartman, A. M., Jobe, J. B., & Ziegler, R. G. (1998). Development of a food frequency questionnaire for an African-American population (Abstract). *European Journal of Clinical Nutrition, 52* (Suppl 2), S53.
- Smith, A. F., Thompson, F. E., Subar, A. F., Brown, C. C., Jobe, J. B., Sharbaugh, C. O., & Mittl, E. (1998). Social desirability, social approval, and reports of food frequency (Abstract). *European Journal of Clinical Nutrition, 52* (Suppl 2), S35.
- Thompson, F. E., Subar, A. F., Brown, C. C., Jobe, J. B., Smith, A. F., Sharbaugh, C., Mittl, E., & Ziegler, R. G. (1998). Comparison of two food frequency questionnaires (FFQ) to daily food list (Abstract). *European Journal of Clinical Nutrition, 52* (Suppl 2), S53.

Meetings and Conferences Organized and/or Attended

- Convention of the American Psychological Assn, San Francisco, August 14-18, 1998
- Convention of the Behavior Genetics Assn, Stockholm, Sweden, June 8-10, 1998
- Convention of the American Psychological Society, Washington, D.C., May 22, 1998
- Convention of the Gerontological Assn of America, Cincinnati, November 15-18, 1997

Committees, Offices, and Professional Activities

- Chair, NIH Interest Group on Methodology and Measurement in the Behavioral and Social Sciences
- Member, Project Officers/Program Officials Forum
- Member, NIH Technical Merit Review Committee, for Evaluation Funds
- Member, NIA Clinical Trials Committee
- Member, NIA Minority Supplement Review Committee
- Scientific Coordinator, NIA Roybal Centers for Applied Gerontological Research
- Scientific Coordinator, NIA-NINR Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) Clinical Trial
- Member, Forum on Research Management Committee, Federation of Behavioral, Psychological, and Cognitive Sciences
- Peer reviewer, *American Journal of Epidemiology, Applied Cognitive Psychology, Journal of Official Statistics*
- Secretary, Division (19) of Military Psychology, American Psychological Association

Training Received

- Appeals Training, January, 1998
- Inclusion of Children in Research Training, July, 1998

Marcia G. Ory

Selected Publications

- Ory, Marcia G., DeFriese, Gordon H., and Duncker, Alfred P. The Nature, Extent, and Modifiability of Self Care Behaviors in Later Life, In M. Ory, G. DeFriese (eds.) *Self Care in Later Life*: New York: Springer Publishing Co., 1998.
- DeFriese, Gordon H., Ory, Marcia G., and Vickery, Donald M. "Toward a Research Agenda for Addressing the Potential of Self Care," In M. Ory and G. DeFriese (eds.) *Self Care in Later Life*: New York: Springer Publishing Co., 1998.
- Teresi, J., Grant, L.A., Holmes, D., Ory, M.G. "Staffing in Special and Traditional Care Units: Preliminary Findings from the National Institute on Aging Collaborative Dementia Care Studies," *Journal of Gerontological Nursing*. January 1998, 1-5.
- Ory, M.G., Cooper, J., and Siu, A. (eds.) *Aging and Primary Care: Organizational Issues in the Delivery of Health Care Services to Older Americans*. Special Supplement to *Health Services Research*. June 1998.
- Ory, M.G., Cooper, J., and Siu, A. "Toward the Development of a Research Agenda on Organizational Issues in the Delivery of Health Care to Older Americans," *Health Services Research*. June 1998.
- Ory, M.G., Zablotsky, D.L., and Crystal, S. (eds.) *HIV/AIDS and Aging*. Special Supplement to *Research on Aging*. Forthcoming November 1998.
- Ory, M.G., and Mack, K. "Trends in HIV/AIDS: Changes and Stability in Transmission Routes, Rates and Risk Factors In Old Age." *Research on Aging*. Forthcoming November 1998.

Meetings Organized and Attended

- Member, Planning Group for trans- DHHS Conference on Medical Self-Management in Managed Care Settings
- Member, Planning Group for Meeting on BRD-USA Health Care Systems and Aging. June 1998.
- Presentation to VA Geriatrics Extended Care Group on Dementia Special Care Units: Findings from the NIA initiative

Professional Responsibilities/Committee Memberships

- Scientific involvement and administrative oversight in several NIA cooperative research studies: National Survey of Self-Care Behaviors; Dementia Special Care Units; Resources for Alzheimer's Caregiver Health; Study of Women's Across the Nation.
- NIA Working Groups: Chair, AIDS and Aging ; Member, OAR/NIH Behavioral and Social Sciences Coordinating Group
- NIA Thematic Areas: Chair, Health Care and Disease Prevention; Medications and the Elderly
- Member, Planning Group for trans-NIH initiative on Innovative Approaches to Disease Prevention through Behavior Change.
- Chair, National Working Group on Older-Patients and their Doctors.
- Executive Board Member, Workgroup on Research and Evaluation in Special Care Units.
- Member, NIA-Fetzer Foundation Working Group on Measurement on Religiosity and Spirituality.
- NIA representative to trans-NIH Working Group on Health Effects of Religion in Spirituality
- NIA representative to trans-DHHS Elder Tech Initiative

Program Announcements and Requests for Applications

- Health-Care Encounters Between Elderly Patients, Physicians and Other Care Provider (With NINR)
- Recompetition of Roybal Centers for Applied Gerontological Research (with Jobe and Stahl)
- Trans-NIH RFA on Innovations in Disease Prevention Through Behavioral Change Interventions

Sidney M. Stahl

Publications

- Stahl, Sidney M. 1998. Views from funding agencies. The National Institute on Aging. *Medical Care*. 36:1123-1125.
- Krakauer, Henry, et al. 1998. 'Best clinical practice': assessment of processes of care and of outcomes in the US military health services system. *Journal of Evaluation in Clinical Practice* 4:11-29.

Meetings Organized, Attended and/or Presentations

- Attended: Invitational meeting on End of Life issues, jointly sponsored by the Robert Wood Johnson Foundation and Milbank Memorial Fund, July 1, 1998, New York.
- Member: Planning group for meeting on joint German/US research effort on Health Care Systems and Aging, June, 1998.
- Attended: Association for Health Services Research meeting, June 1998, Washington, DC.
- Presentation: "Diversity Issues in the Long-Term Care Setting." Paper presented at the American Geriatric Society meetings, May 9, 1998, Seattle.
- Discussant: "Health Promotion in Aging Populations." Gerontological Society of American meetings, November 16, 1997, Cincinnati.
- Organized: planning meeting for initiative on Work Organizations and Older Workers, NIA/BSR and PASC, October 1997.
- Presider and Discussant: "Medical Sociology: Methodological and Theoretical Contributions." American Sociological Association meetings, August 9, 1997, Toronto.

Professional Responsibilities/Committee Membership

- Performance Measurement Working Group. DHHS-wide group responsible for suggesting operationalizations for the President's Health Care Consumers' "Bill of Rights."
- Violence Against Women (Working Group). DHHS-wide group responsible for advising the Secretary on prevention and research topics/strategy regarding domestic violence.
- Working Group on Elder Victimization. Dept. of Justice Working Group to recommend prevention and research topics/strategy on elder abuse.
- Federal Liaison Committee for the National Institute of Occupational Safety and Health (NIOSH) to advise them regarding future directions and progress of their National Occupational Research Agenda.
- NIA Working Group on Cardiovascular research.
- NIH-wide Committee on Research, Demonstration & Evaluation Activities, to advise the Director on the NIH's role and involvement in Health Services Research.
- Trans-NIH Child Abuse and Neglect Working Group, to encourage research designed to enhance NIH's understanding of and involvement in the etiology, extent, services, treatment, management, and prevention of child neglect.

Program Announcements

- Implementation of the National Occupational Research Agenda (RFA OH-98-044) with NIOSH, NIAMS, NIEHS, NHLBI, and NIA.
- Roybal Centers for Applied Gerontological Research (RFA AG-97-005), recompetition, with Drs. Ory and Jobe.

OFFICE OF DEMOGRAPHY OF AGING
INTERAGENCY AGREEMENTS

Contact: Richard Suzman

Funding Received by NIA

SOCIAL SECURITY ADMINISTRATION (SSA)

Title: **Health and Retirement Study (HRS)**
Y3-AG-7252-05
Amount: $400,000

The Social Security Administration (SSA) has transferred funds to the NIA for partial support of the Health and Retirement Survey (HRS) and Survey of Assets and Health Dynamics of the Oldest Old (AHEAD). SSA funds will be used to support interviewing and data development costs. Some assistance will also be given to support the work of the HRS Design and Data Monitoring Committee. NIA will provide SSA with copies of materials developed by the grantee in the performance of this activity, including reports, publications, and data tapes from the survey.

OFFICE OF THE ASSISTANT SECRETARY FOR PLANNING AND EVALUATION (ASPE)

Title: **1999 National Long-Term Care Survey: Informal Caregivers Supplement**
Y3-AG8392-01
Amount: $300,000

The Office of the Assistant Secretary for Planning and Evaluation (ASPE) has transferred funds to the NIA for partial support of the National Long-Term Care Survey, Informal Caregivers' Supplement to be conducted under the direction of the Duke University, Center for Demographic Studies (R01-AG-07198).

Funding Provided by NIA

HEALTH CARE FINANCING ADMINISTRATION

Project title: **HCFA Medicare Database Costs**
Y2-AG-7273-03
Amount: FY98 $40,000

NIA transfers funds to the Health Care Financing Administration (HCFA) to support the data processing and logistical arrangements necessary to provide Medicare claims data to the National Bureau of Economic Research (NBER-P01 AG05842). The NBER's Medicare database contains longitudinal medical claims data on beneficiaries treated for selected major illnesses, and for a 20 percent random sample of beneficiaries. These data are updated annually, and are used in a number of NIA-funded projects at the NBER. The most extensive use of the Medicare data is for an NIA-funded program project on the economics of aging.

NATIONAL CENTER FOR HEALTH STATISTICS, CENTERS FOR DISEASE CONTROL AND PREVENTION

Project title: **Medical Care Expenditures for Circulatory Diseases, including complications, unrelated diagnoses, and comorbidities**
Y1-AG-8375-01

Amount: FY98 $120,000
FY99 $65,000

In its recent report *Scientific Opportunities and Public Needs: Improving Priority Setting and Public Input at NIH* (July 8, 1998), the Institute of Medicine (IOM) observed: When institutes with responsibility for particular diseases publish information on economic costs of disease, comparability is limited by differences in databases and methodologies. IOM recommended: "In setting priorities, NIH should strengthen its analysis and use of health data, such as burdens and costs of diseases". Disease burdens, including economic costs, must be more systematically and thoroughly calculated than they are currently done.

In order for costs of illness to more fully satisfy the IOM recommendation for systematic and thorough calculation, medical care expenditures by disease must meet three criteria: (1) be estimated consistently across diseases, employing the same data and methods for each disease, so that expenditures for different diseases can be fairly compared, (2) be estimated systematically across diseases, so that the sum of expenditures for all diseases just equals the total national health expenditures, and (3) be comprehensive, so that disease categories will be as specific as data allow in order to increase the number of diseases evaluated and usefulness of costs of illness.

NIA provided funds to NCHS to demonstrate the feasibility of achieving criteria (1) and (2) (listed above) by calculating consistent and exhaustive estimates of expenditures in 1995 for major diseases, namely each of the 18 broad categories (chapters) in the International Classification of Diseases (ICD-9-CM). The sum of expenditures over all diseases totals to the Health Care Financing Administration's national total for personal health care expenditures, without overlapping or double counting. The feasibility of achieving criteria (3), without violating (1) and (2), was demonstrated for circulatory diseases by estimating expenditures for all heart disease, coronary heart disease, congestive heart failure, hypertension, and stroke. The results of this project are currently in manuscript form undergoing peer review in 3 different journals:

(1) *Medical Care Expenditures for Major Diseases, 1995* submitted to the *Health Care Financing Review*. This article reports medical expenditures by sex, age and type of health service (hospital care, physician services, etc.) for 18 major categories of disease, such as neoplasms, circulatory diseases, mental illness, etc. Total and per capita expenditures are given for persons under 65 years, 65-74, 75-84, 85 and over. This paper provides a view of expenditures across the various broad disease classes.

(2) *Medical Care Expenditures for Selected Circulatory Diseases, 1995* submitted to *Medical Care*. This article reports expenditures for total diseases of the circulatory system, heart disease, coronary heart disease, congestive heart failure, hypertensive disease, and cerebrovascular disease by sex, age and type of health service. The burden of circulatory diseases increases with age, amounting to 35 percent of total expenditures among persons 85 years and over. This paper reveals how expenditures vary for specific cardiovascular diseases. Successful disaggregation of circulatory disease expenditures by type of circulatory disease shows the potential insight to be gained from disaggregation of expenditures for other disease categories, such as neoplasms. A proposal for disaggregation of all major disease categories has been submitted.

(3) *Medical Care Expenditures for Diabetes, Its Chronic Complications and Comorbidities* submitted to *Preventive Medicine*. This article reports expenditures for diabetes, including expenditures for chronic complications of diabetes, unrelated conditions for which diabetics are

at higher risk, and various comorbidities that raise the cost of medical care. Expenditures are estimated by sex, age and type of health service. This paper shows the importance of accounting for expenditures beyond those related to first listed diagnoses.

Project title: **Longitudinal Study of Aging (LSOA) Wave 3**
Y1-AG-8374-01
Amount: FY 98 $805,000
FY 99 $805,000

Project title: **Longitudinal Study of Aging (LSOA) Wave 2**
Y1-AG-7183-08
Amount: FY98 $200,000

NIA originally provided funds to NCHS to create the Longitudinal Study of Aging (LSOA). This study was based on re-interviewing the age 70+ respondents to the 1984 Supplement on Aging in 1984, 1988, and 1990. In 1994, NIA provided NCHS with additional funds to create a second SOA-LSOA cohort. The LSOA II data, when used in conjunction with data from the original LSOA, enables researchers to determine whether the prevalence and incidence of functioning, pathology, and impairments in the elderly population has changed over the past 10 years and whether the change is due to differences in cohort characteristics or to technological and medical advancements. This data set is invaluable for tracking trends in disability and the impact of changes in the health care system on disability.

In March 1998, NIA approved funding for the third wave of the LSOA II. To preserve the two-year data collection interval for Wave 3 of the cohort (as recommended by external reviewers), work related to questionnaire development began immediately after funding was approved. An NIA monitoring committee was formed, and met several times to discuss changes to the Wave 2 questionnaire for implementation in Wave 3. The major changes that have been completed include: a reworking of the Income and Assets section and the Health Care Coverage and Utilization section, addition of expectation and engagement questions, and the placement of the Childhood Health and Family Longevity section within the main body of the questionnaire.

Activities related to IRB and OMB clearance are also well underway. The CDC IRB package was submitted for review on July 6, 1998. This approval must be obtained prior to submission of the OMB package. OMB clearance documents are currently being prepared. The clearance process required by the Centers for Disease Control and Prevention has begun and will be completed prior to departmental clearance. Once OMB approval is obtained, a contract can be awarded; this is expected in December 1998.

Project title: **LSOA NDI/Medicare Linkage**
Y1-AG-7224-05
Amount: FY98 $120,000
FY99 $ 90,000

Linking Medicare files to survey data greatly enhances the survey data. The linkage provides a medical and cost/billing history prior to baseline, between Waves, and for a period after the last Wave. Linking administrative data to the LSOA will be key to understanding disability, transitions, and associated costs.

NCHS has received funding from NIA to continue administrative data matches with the LSOA and LSOA II surveys. The Medicare Enrollment Files match has been completed with those SOA II sample persons who provided permission to do so. Once these match data are processed, they will be resubmitted to the Health Care Financing Administration (HCFA) for matching to the Medicare Standard Analytic Files. The files that will be matched originate from seven HCFA analytic files: the Outpatient, Inpatient, Home Health, Hospice, Skilled Nursing Facility, and Physician. To obtain information on health care utilization data one year prior to the survey, HCFA data for 1993 has also been obtained.

The application to conduct National Death Index (NDI) matches for the LSOA II has recently been approved by NCHS. Researchers at NCHS plan to obtain 1994 NDI data to match the 1994 baseline LSOA II data. As with the HCFA match, the LSOA II records can be submitted concurrently with LSOA records to avoid multiple match processes and to conserve funds. The NDI match is expected to be completed by the end of 1998.

Project title: **Trends in Health and Aging**
Y1-AG-7095-12
Amount: FY98 $225,000
FY99 $325,000

The objectives of this project are to develop a dynamic information system on health and aging using data from NCHS and a number of other data systems, to disseminate this information using modern technologies, to train junior researchers and to analyze and interpret the information for the Federal Forum on Aging-Related Statistics as well as other consumers.

During FY98, work continued on several major activities including the *1999 Health, US Chartbook on Health and Aging*, a data base on health and aging, and several special reports associated with the data base. In addition, the project continued to support and train two CDC/ATPM fellows and one Epidemic Intelligence Officer (EIS).

Project title: **Logistics Support for the Federal Interagency Forum of Aging-Related Statistics**
Y1-AG-8389-01
Amount: FY98 $100,000
FY99 $100,000

In 1986, the National Institute on Aging, in collaboration with the National Center for Health Statistics and the Bureau of the Census, established the Federal Interagency Forum on Aging-Related Statistics (Forum). During its tenure, the Forum played a key role in improving aging-related data by encouraging cooperation and data sharing among different agencies, fostering professional collaboration across different fields and compiling aging-related statistical data in a centralized location. The meetings of the Forum have helped to publicize a number of important issues including 1) the establishment of the Health and Retirement Study (HRS) and survey of Asset and Health Dynamics Among the Oldest Old (AHEAD), 2) the addition of questions on aging to existing surveys such as SIPP, LSOA and PSID, 3) the acceptance of more standardized age categories and 4) the development of statistics on more narrowly defined age and race categories.

Despite these successes, the Forum has recently been reorganized in response to the major changes that have taken place within the federal statistical system. As part of this reorganization, NIA is providing funds via an interagency agreement to the National Center for Health Statistics to provide funds for 1) an Executive Officer who will organize Forum meetings and participate in data-related activities, 2) the logistic arrangements to hold Forum meetings, 3) computer equipment and 4) report preparation and publication. To date, an Executive Officer has been hired and has begun working on potential topic areas for the next meeting of the Forum.

DHHS OFFICE OF INTERNATIONAL AND REFUGEE HEALTH -OIH

Project title: **Modeling Health and Interventions – Extension**
Y1-AG-7132-10
Amount: FY98 $210,000
FY99 $210,000

Following the great interest in the Global Burden of Disease and the Denver Summit's encouragement of cross-national research and data collection on population aging, the need for projection models which attempt to estimate future health events has become even more imperative. In part to address this need, WHO is adopting a focus aimed at optimizing the cost-effectiveness of interventions. In this context, systematic forecasting models will be used to, 1) help to pinpoint which health issues are most important nationally and regionally and hence require interventions, 2) facilitate production of cost estimates for interventions and health outcomes and 3) provide estimates and projections of the consequences of interventions.

The major focus of activities during the past year have revolved around the extension of two major modeling activities; 1) WHO Cross-National Study on Needs for Home- or Community - Based Care and 2) Modeling Risk Factor Trajectories and Changes in Noncommunicable Disease Disability and Mortality. As part of the first activity, cross-sectional and longitudinal surveys have now been collected from 36 study sites in 30 countries. Sixteen sites are longitudinal studies with at least 2 rounds. These studies occur exclusively in developed countries. Data is examined from surveys in each of the countries that allow prevalences of self-evaluated levels of functional status in elderly populations to be estimated. During the past year, researchers at WHO have worked primarily on the initial processing of each dataset to assure the comparability of ADL, IADL and cognitive measures used in various surveys, either by recoding, when possible, or by evaluating the extent of discrepancies in scores calculated using the analytic methodology (GoM).

The second activity stems from discussions at the Informal Workshop on Forecasting Morbidity, Mortality and Disability in Noncommunicable Diseases held at Harvard University on 22-23 October 1997. This workshop emphasized the importance of modeling in longitudinal epidemiological datasets for special subgroups of populations, e.g., certain ethnic groups, persons with already elevated values of specified risk factors, or persons who were screened on certain NCD risk factors and who were subsequently invited to enter into controlled clinical trials to test the effectiveness of interventions to reduce these risk factors. Researchers at WHO have examined trajectories of risk in both the treated and untreated groups, modeled risk factor levels and changes to predict mortality, and checked these predictions against the mortality follow-up from the different studies (this was done for USA studies only where cause-specific mortality follow-up was available). These results are being incorporated into a larger sets of data from cross-sectional or serial cross-sectional studies where trajectory and mortality data is not

available where they will be used to provide, when suitably adjusted, trajectory and mortality estimates for the cross-sectional datasets.

Project title: **Estimation and Projection of the Global Burden of Diabetes, World Health Organization (WHO)**
Y1-AG-8373-01
Amount: FY98 $25,000

The recent estimates of diabetic complications which appeared in the Global Health Statistics report produced by Murray and Lopez, when presented to an international audience of diabetologists were considered to be considerably underestimated. Because such estimates are often requested from WHO by national governments for planning diabetes health care, more accurate estimates of the number of persons with the major long-term diabetes complications are needed.

NIA provided WHO with funds to further examine the worldwide frequency of the major diabetic complications. By using the estimates of the number of people affected by diabetes that recently appeared in the ADA journal *Diabetes Care* (September 1998) and applying these to available published estimates of the prevalence of the major complications (blindness, heart disease, kidney failure, amputation) by country and region of the world, WHO has been able to derive the number of people with each of the major complications by country.

Project title: **Global Burden of Disease**
Y1-AG-8372-01
Amount: FY98 $150,000
FY99 $150,000

Several recent studies and communiqués, including the World Health Organization/World Bank/Harvard School of Public Health Global Burden of Disease report (edited by Chris Murray and Alan Lopez), Manton's study on the decline of disability in the United states, and the Denver communiqué of the G8 Summit, have heightened interest in trends in life and health expectancy. The purpose of this interagency agreement is to 1) develop an integrated distal-proximal cause model, 2) partition projected changes in mortality into incidence, remission and case-fatality rates and 3) create a library of datasets on distal and proximal causes and outcomes.

During the past year, researchers at WHO have completed the calculation of life tables by county and race for the US including life expectancy at age 60 and 65. Currently, they are working on the development of new methods of projecting mortality by cause as a function of socio-economic variables and smoking intensity. The variables currently being examined are income per capita, educational attainment, income inequality, smoking intensity. The model is being fitted to two datasets: a panel of 50+ countries from 1950-1995 prepared by the WHO and a panel of state/county level mortality by cause for the US 1959-1995. In addition, a new projection model is under development as well as new statistical methods to integrate multiple datasets into the model.

U.S. BUREAU OF THE CENSUS

Project title: **Domestic Aging Program Core Funds**
Y01-AG-7094-12
Amount: FY98 $225,000

FY99 $225,000

The purpose of the Domestic Aging Program is to represent within the Census Bureau the interests of both NIA and the aging research community, and to coordinate aging-related activities and materials produced by the Census Bureau.

Core activities undertaken in FY98 as part of the Domestic Aging Program include participation in age-related Census 2000 activities, the production of special tabulations and reports for ad hoc requests for aging-related data, representation of the Census Bureau at aging-related conferences and meetings, and the production of aging-related materials for dissemination to the public. The latter includes a report on the U.S. centenarian population, a state chartbook on aging, a gender and aging wallchart, a report on poverty and aging in the US and research briefs on kin availability for family caregiving and on foreign born elderly.

Project title: **International Database on Aging (IDBA) Core Funds**
Y1-AG-7055-20
Amount: FY98 $267,800

In response to the need for reliable and internationally comparable statistics on population aging, the National Institute on Aging and the International Programs Center (IPC), Bureau of the Census, undertook in 1985 the creation of an International Data Base on Aging (IDBA). The intent of this effort has been twofold: to promote a better understanding of the aging process in disparate societies; and concurrently, to afford researchers and policymakers in the United States a better opportunity to gain insights and formulate responses to demands generated by an aging American population.

In FY98, a 100-country update of the IDBA was completed as background for a revision of the periodic Census Bureau publication *An Aging World*. To remain current, the IDBA country coverage has been periodically updated to include new countries such as the former republics of Yugoslavia. Revised population age/sex projections have also been added to the database by the IPC's Information Resources Branch on a flow basis as IPC analysts complete their evaluations of new national data.

During the past year, Staff continued to consult with the Population Activities Unit of the U.N. Economic Commission for Europe with regard to eventual inclusion of 1990-round census microdata into the IDBA, and the production of a wallchart highlighting European data. In addition, the Census Bureau transferred funds to the Organization for Economic Cooperation and Development (OECD) as part of interagency agreements with the NIA, the Social Security Administration and the HHS Office of the Assistant Secretary for Planning and Evaluation. The funds were used for the second phase of an ongoing research project into various aspects of aging in OECD nations, which culminated in the OECD report *Maintaining Prosperity in an Aging Society*.

In addition, several reports were published or reissued including a wallchart on *Aging in the Americas,* three international briefs on *Gender and Aging,* a wallchart on *Global Aging into the 21st Century*, and an Internet version of *Data Base News in Aging*.

Title: **Population Reference Bureau (PRB) – Teaching Module**
Y1-AG-8390-01

Amount: FY98 $120,000
FY99 $120,000

One of the main functions of the Office of Demography of Aging is to disseminate demographic data and complicated or difficult to understand aspects of demography as they relate to aging research. To do this, ODA has provided funds to the Population Reference Bureau (PRB) to develop an education module based on the Census Bureau's "Aging in the United States" wall chart. The purpose of the education module is to teach high school and college students about the past, present, and future size and characteristics of the elderly population in the United States. Specifically, the education module describes how the elderly population has changed over time and what some of the social, demographic, and economic effects are of these changes.

To date, PRB has completed a rough draft of a module that includes the following four activities; Activity One asks students a series of 20 questions based on the "Aging in the United States" wall chart. Activity Two requires students to construct a national population pyramid, and then to discuss population trends over time based on the pyramid data. In the third activity, students complete a similar exercise using state or county-level data. In Activity Four, students construct a choropleth map to investigate regional differences in the distribution of the elderly population in the United States. Students are then asked to speculate about the possible causes and implications of these regional variations.

In addition, PRB has assembled a state data table, glossary, bibliography, and summary of trends to be included in the packet of materials. PRB's Production Manager is working on the overall design for the folder, activities, and data sheet. Staff members have also consulted with PRB's Director of Publications to discuss the distribution of the 10,000 modules.

Project title: **Cross-national Differences in the Treatment of Aging-related Disease: What is Best, and at What Cost? – OECD via the Census International Database of Aging (IDBA) IAG**
Y1-AG-8363-01
Amount: FY98 $230,000
FY99 $200,000
FY00 $200,000

Aggregate medical spending differs widely across countries. Large variations exist in the frequency and the mix of medical services provided as well as the type of technology applied. While less variation may exist in outcomes (particularly survival rates), it is possible that survival rates do not fully capture the effectiveness of treatment for the welfare of patients and should be supplemented by other measures of functionality. An international comparison of treatments of conditions in older population that lead to high expenditures could help identify treatments that might be more effective in improving outcomes at lower cost. Under an interagency agreement with NIA, the OECD is focusing on international comparisons of treatments for a spectrum of prevalent conditions in older population with high aggregate medical expenditures such as diabetes, myocardial infarctions, and cataracts.

During this past year, the OECD has completed the second phase of its cross-national work with the preparation of a report, *Maintaining Prosperity in an Aging Society*. This report was reviewed by the OECD Ministerial Council in April 1998 and by Social Policy Ministers in June,

at a meeting chaired by the Honorable Donna E Shalala, US Secretary of Health and Human Services.

The report was considerably influenced by the Denver G8 Summit communiqué, by consultations with experts (including David Wise and David Cutler), and by use of cross-national research on aging that had been funded by the NIA in recent years. The integration of several different aging-related topics made it possible to further develop the concept of active aging and to concentrate on the cross-national data and applied research gaps that need to be filled in order to sustain reform. These themes were featured prominently in the report and, as a consequence now have become an accepted component of the international policy agenda.

The critical first chapter of the report, which contains the recommendations, concluded with a call for international cooperation including in developing comparable data. Chapter VI addressed Active Aging reforms in employability, health and long-term care. Indeed, the American support in the second phase of the aging project allowed the development of a specific proposal for new analytic work related to health care effectiveness. (This has subsequently been further developed into a detailed proposal that will receive NIA funding.)

Project title: **Population Activities Unit/Economic Commission on Europe/United Nations (PAU/ECE/UN) Program on Aging – via the Census International Database on Aging (IDBA) IAA**
Y1-AG-8361-01
Amount: FY98 $160,000
FY99 $ 80,000

NIA has provided funds (along with the United Nations Population Fund (UNFPA)) to the Population Activities Unit, Economic Commission for Europe, United Nations (PAU/ECE/UN) to develop trend and cohort data on the rapidly aging populations in Europe. The main objective of this interagency agreement is for the PAU/ECE/UN to create a pool of information for policy-oriented research and analysis on issues related to population aging, and specifically the social and economic status of older persons.

(1) Data Collection and Processing. Assembling a set of cross-nationally comparable micro-data samples based on the 1990-round of national population and housing censuses in selected UN/ECE member countries has been the primary goal of the PAU/ECE/UN. A common set of nomenclatures and classifications, derived on the basis of a study of census data comparability in Europe and North America, were adopted as standards for recoding. The processing of the data sets, which included drawing of the samples (when requested by the National Statistical Offices), cleaning (where necessary), and standardization, was performed by the PAU.

(2) Survey of Aging Research in the ECE Region. This survey was carried out in 1995 and 1996 by the PAU in collaboration with the United States National Institute on Aging. The goals of the survey were to take stock of recent and current aging research in the European countries, to identify innovative research strategies and high-quality survey instruments that can be used throughout the region in the future, and to find out what type of cross-national aging research should be initiated in Europe during the coming years. The survey went through two waves. The first wave aimed at taking stock of a wide range of aging-related research. It covered over 300 projects from about 150 institutions and individuals. The results were published earlier this year in *Directory of Population Aging Research in Europe*. About 50 of these projects were selected

for the second wave of the survey, the goal of which was to compile more detailed information on large scale, nationally representative research efforts, particularly those involving primary data collection with high-quality survey instruments. Results of the second wave were published earlier this year in *Report on Aging Research in Europe: Demographic, Social and Behavioral Aspects* (by E. M. Agree and G. C. Myers) that summarizes the survey's major findings.

(3) Coordinating and Participating in an International Research Program on the Social and Economic Conditions of Older Persons. Two types of studies were planned within the context of PAU's research program in the field of population aging. Both types of studies aim at enhancing national capacities to formulate and evaluate programs and policies targeted towards older people, through increased knowledge of the determinants of the social and economic status of older persons, and through better understanding of the existing range of policy instruments in this field. The work within this line of activities has so far concentrated on the first type of studies, which are country reports that present the process of population aging and the status of older persons in participating countries. The work on the country reports is funded solely by UNFPA.

(4) Conference Program The PAU has been active in organizing conferences, substantive meetings and workshops. A large conference is planned for 1999 that will attempt to coordinate ongoing demography of aging research in Europe and Eastern Europe.

Project title: **United Nations Population Division: Determinants and Consequences of Population Aging - via the Census International Database on Aging (IDBA) IAG**
Y1-AG-8362-01
Amount: FY98 $100,000
FY99 $100,000

Currently, extant sets of international population projections provide age-specific detail only up to age 80, after which all persons aged 80 and over are lumped into a single, open-ended category. Given the rapid growth in the 80 and over population worldwide, a revised projection methodology is needed to afford researchers and policy planners the necessary cross-national comparative information on population size and characteristics of the so-called "oldest-old."

As a major follow-up activity to a meeting held in 1996 with the participation of NIA and NIA-supported researchers (the Working Group on Old-Age Mortality and Its Consequences), the Population Division has been working to provide population estimates and projections for 5-year age groups up to age 100 years; up to now, such detail had been provided only up to 80 years, with a final open-ended category of 80+ years. The 1998 Revision of the estimates and projections of population will include the new age detail. The results are expected to be announced in November 1998. A statistical wall chart on global population aging is also being prepared as a contribution to the International Year of Older Persons. The wall chart is scheduled to be issued in early 1999.

<u>NATIONAL SCIENCE FOUNDATION</u>

Project title: **Family Interactions, Social Capital, and Trends in Time Use – Supplement on Time Use Among the Elderly (as a supplement to the National Science Foundation)**

Y1-AG-8364-01
Amount: FY98 $11,700
FY99 $23,300

The NSF-funded study of working-age adults seeks to answer both substantive and methodological questions in time use. The substantive questions revolve around long-term trends in the time adults spend in various types of social contact, with particular interest in time spent with children and spouses ad time spent alone. The methodological questions center on the problems survey respondents have in making accurate estimates of the time they spend on various activities. Most of these substantive and methodological issues are also relevant to how the elderly spend their time and the quality of data on time use that can be garnered for the older population.

Under an interagency agreement with NIA, the study sample has been expanded to include those over age 65. Data collection for the study began in March 1998, and since then 526 interviews have been completed, 86 with persons over age 65. Survey fieldwork will continue for the remainder of 1998 and the first few months of 1999 producing a total of 1200 interviews (200 to 250 with persons over age 65).

Project title: **Panel Study of Income Dynamics (PSID), Core Funding (as a supplement to the National Science Foundation)**
Y1-AG-7188-09
Amount: FY98 $150,000
FY99 $175,000

The Panel Study of Income Dynamics (PSID) is a nationally representative longitudinal study that collects information on U.S. households. The Office of Demography has been providing funds to collect additional waves of aging-related data to supplement potential analyses of intergenerational exchanges and interactions. The PSID contains all age groups including the baby boom cohort which is not yet represented in the Health and Retirement Study (HRS). NIA funding has served to orient the PSID more satisfactorily to aging issues in order to facilitate researchers in merging PSID and HRS data.

NIA funding for FY 1998 covered the processing, release and analysis of wealth supplement data collected earlier in the project. Software was developed for the imputation of the wealth files from 1984,1989, and 1994. This has also been done for the active savings variables from 1989 (covering 1984-1989) and 1994 (1989-1994). These variables and documentation were placed on the PSID Internet site as special files (http://www.umich.edu/~psid/ under 'What's New?'). Researchers will now be able to use the longitudinal nature of the PSID to explore the potential for the effect of demographic variables on household wealth accumulation. In addition, continued data from the PSID will be able to shed light on the individual household saving behavior of the baby boom generation and its neighboring age cohorts. In terms of methodology, the panel nature of the PSID Wealth data (three wealth modules, with a fourth pretested for 1999) will allow the estimation of fixed effects models of savings of the baby boomers. Such models are important because in any cross-section there will be a correlation on an unobserved savings propensity with accumulated savings. This needs to be accounted for in estimating long term models of the savings rate at the household/family level. This has not been possible prior to these multi-wave, panel wealth data.

Project title: **National Academy of Sciences Committee on National Statistics, Core Funds (via the NSF)**
Y1-AG-7338-02
Amount: FY98 $46,209
FY99 $48,058

NIA has been adding to core funds for the Committee on National Statistics (CNSTAT) for several years. The Committee reviews the statistical programs of federal agencies and suggests possible improvements. CNSTAT studies what data and methodology are needed for public policy decisions on important social and economic issues. It monitors and assists in the statistical policy and coordination activities of the federal government and provides a forum for the timely discussion of statistical issues related to public policy.

During this reporting period, the Committee has contributed to the improvement of national statistics and methodology in a number of ways. Some activities of particular importance to the National Institute on Aging include:

Review of the Social Security Administration's disability decision process research. The Committee is collaborating with the Institute of Medicine on this panel to review Social Security Administration (SSA) plans for a research program on a revised disability determination process. The research program includes a major national survey to determine the numbers of those eligible for Social Security disability benefits and to provide information to improve the process of determining eligibility for those benefits. A second interim report, *SSA's Disability Decision Process: A Framework for Research*, a preliminary review and comment on the SSA research plan, was released in May 1998. The panel also conducted a workshop in June on functional capacity and work requirements as it relates to SSA's disability decision process research. Proceedings from this workshop will be published.

The *Panel on Performance Measures and Data for Public Health Performance Partnership Grants* is charged with assessing and recommending performance measures for local, state, and federal officials to use in appraising progress in meeting objectives of public health Performance Partnership Grants (PPGs) in a number of areas, including mental health and substance abuse. PPGs were proposed as an alternative to traditional categorical grant programs, to offer states greater accountability for results. The panel is also charged with recommending ways that federal and state health information networks can be enhanced to facilitate more widespread and more effective use of performance measurement. In 1997 the panel released a report of its first phase of activities, *Assessment of Performance Measures for Public Health, Substance Abuse and Mental Health* and began then the second phase of its work on the further development of performance measures and the information networks to support them. The panel's final report will be released at the end of this year.

Topics of other future activities include: an expert review of the statistical procedures for the decennial census, research on future census methods, workshop on the American Community Survey, digital government, health statistics, environmental indicators, establishment surveys, and further activities in economic statistics. In addition, the Committee is collaborating with the Committee on Population developing studies on international comparative data on the aging population and collecting genetic biomarkers in household surveys.

Project title: **National Academy of Sciences/Committee on National Statistics – Workshop on Confidentiality and Data Access for Research.**
Y1-AG-8382-01
Amount: FY98 $120,000
FY99 $ 55,000

Under an interagency agreement with NIA (and several other Federal agencies), the Committee on National Statistics (CNSTAT), in consultation with the Institute of Medicine (IOM), will convene a two-day workshop to bring together NIA researchers with other users of linked data (such as experts in statistical disclosure limitation techniques, experts in informatics, and experts concerned with confidentiality policies and administrative and legal procedures) to discuss the confidentiality issues surrounding data linkage. The use of linked data (e.g. health, economic, contextual, employer) presents extraordinary research opportunities to discover new scientific knowledge and to help in the evaluation and design of policies to deal with an aging society. At the same time, the use of linked data by researchers presents a complex set of challenges to maintain the confidentiality of survey respondents and citizens whose administrative records are entrusted to the government. The goal of this project is to identify ways to best serve the often conflicting goals of exploiting the research potential of linked data and the need to maintain the appearance and reality of preserving confidentiality.

A pre-planning meeting for the workshop was held on July 10, 1998 to discuss the overall purpose of the workshop and to brainstorm on specific confidentiality issues surrounding linked data that could become potential workshop sessions. The meeting was attended by a wide variety of representatives from Federal agencies (i.e., HCFA, SSA, BLS, AHCPR and NIH), who have an interest in confidentiality issues. A planning meeting is scheduled for October 9, 1998 to finalize the workshop agenda and to produce a list of potential participants. The workshop is expected to be held in early spring, 1999.

Project title: **National Academy of Sciences/Committee on National Statistics Workshop on the Measurement of and Research on Time Use**
Y1-AG-8381-01
Amount: FY98 $35,000

Under an interagency agreement with NIA, the Committee on National Statistics (CNSTAT) plans to convene a workshop to explore policy-related questions about how people spend their time, as well as major methodological and measurement issues surrounding time use. A major purpose of the workshop is to assist potential funders of research on time use on a framework for data collection and research that meets important policy needs. The workshop will (1) provide overviews of research conducted of time use by Americans of different ages and working status; (2) review survey methods for conducting time use studies; (3) review existing national surveys and other sources of data that have the potential for collecting ongoing data on time use; (4) suggest new surveys or enhancements to current ones that are needed; (5) identify those economic and social policy issues that could be better informed with time use data; (6) discuss innovative directions for time use research; and (7) identify issues and problems for further study. The workshop is tentatively planned for the spring of 1999. To date, CNSTAT has compiled information on the topic of time use and collected information on potential participants for the workshop. The Committee on National Statistics will meet in October to discuss further plans for the workshop.

NIH/OD UMBRELLA CONTRACT FOR NATIONAL ACDEMY OF SCIENCES

Project title: **Committee on Population, National Academy of Sciences: Workshop on Collecting Biological Indicators and Genetic Information in Household Surveys**
N01-OD-4-2139, Task Order 49
Amount: FY98 $106,907
FY99 $68,093

Advances in biodemography will require a greater ability to analyze within populations the interactions of genes, environment, and behaviors, requiring linked data on all three domains. Population based longitudinal surveys may provide some data on the environment or playing field within which genetic factors operate. Household survey data include parental family information, educational histories, health care utilization and past diagnoses, occupational histories, migration histories, all in more detail than is common in other data sources. For example, with new methods to measure wealth, these studies can increasingly provide more complex longitudinal versions of previously "simple" variables such as "socioeconomic status," which others attempt to control when looking for associations between particular exposures, and risk factors, with health outcomes.

NIA is providing funds to the Committee on Population (CPOP), National Academy of Sciences, to hold a workshop on Collecting Biological Indicators and Genetic Information in Household Surveys. Since this interagency agreement was funded through the NIH Task Order ("Umbrella") Contract on September 30, 1998, there has not been any progress to report.

Project title: **Committee on Population, National Academy of Sciences: Research Agenda and New Data for an Aging World: an International Panel**
N01-OD-4-2139, Task Order 48
Amount: FY98 $348,223
FY99 $251,769

Most of the data used in international comparisons today came from cross-sectional studies of aging populations. Because aging is a highly dynamic process, cross-sectional surveys capture only a moment of the dynamic and the rest of the aging process must be inferred from sequential cross-sectional surveys. But longitudinal surveys, which can capture the dynamics of individuals aging, are very expensive. Therefore, one challenge for the countries of the more developed world is to coordinate their investments in information; they need to get the maximum information from their modest public investments in learning more about their own aging population. Through an NIH Task Order, the Committee on Population and the Committee on National Statistics proposes to develop a research agenda for population aging that will include short, intermediate and long term perspectives. Once there is a working draft of the agenda, the NAS will invite other national science academies to join a meeting that would issue the equivalent for an international White Paper. This statement and document could then be used by other countries and governments to design and secure funding for their own research on population aging. Since this interagency agreement was funded through the NIH Task Order ("Umbrella") Contract on September 30, 1998, there has not been any progress to report.

HEALTH RESOURCES AND SERVICES ADMINISTRATION

Title: **Year 2000 International Conference on Rural Aging**
Y1-AG-8360-01

Amount: FY98 $155,000
FY99 $245,000

The U.S. Census Bureau estimates that at least 60 percent of the world's older population lives in rural areas. However, issues of rural aging have yet to be addressed by a major international project/conference. Under an interagency agreement with NIA, the Bureau of Health Professions at the Health Services and Research Administration is providing funds to the Geriatric Education Center at West Virginia University to support the "Year 2000 International Conference on Rural Aging." This conference will be held June 7-11, 2000 in Charleston, West Virginia.

During FY98, a brainstorming meeting was held with the participation of two international experts to set the timeline and time frame for the 2000 International Rural Aging Conference. In addition, the first meeting of the International Program Committee, the committee members reached consensus on several issues including 1) key topics for invited symposia and keynote speaks, 2) a time-line of project implementation, 3) milestones to reach in project implementation and 4) ideas on the types of reports and publications to be prepared.